AAR Mechanical Division film shows effect of **impact** on plain bearing assemblies .. p. 22

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September 11, 1961

RAILWAY AGE WEEKLY

THIS WEEK:

Coordinated Mechanical Meetings and Allied Exhibits in Chicago

p. 18

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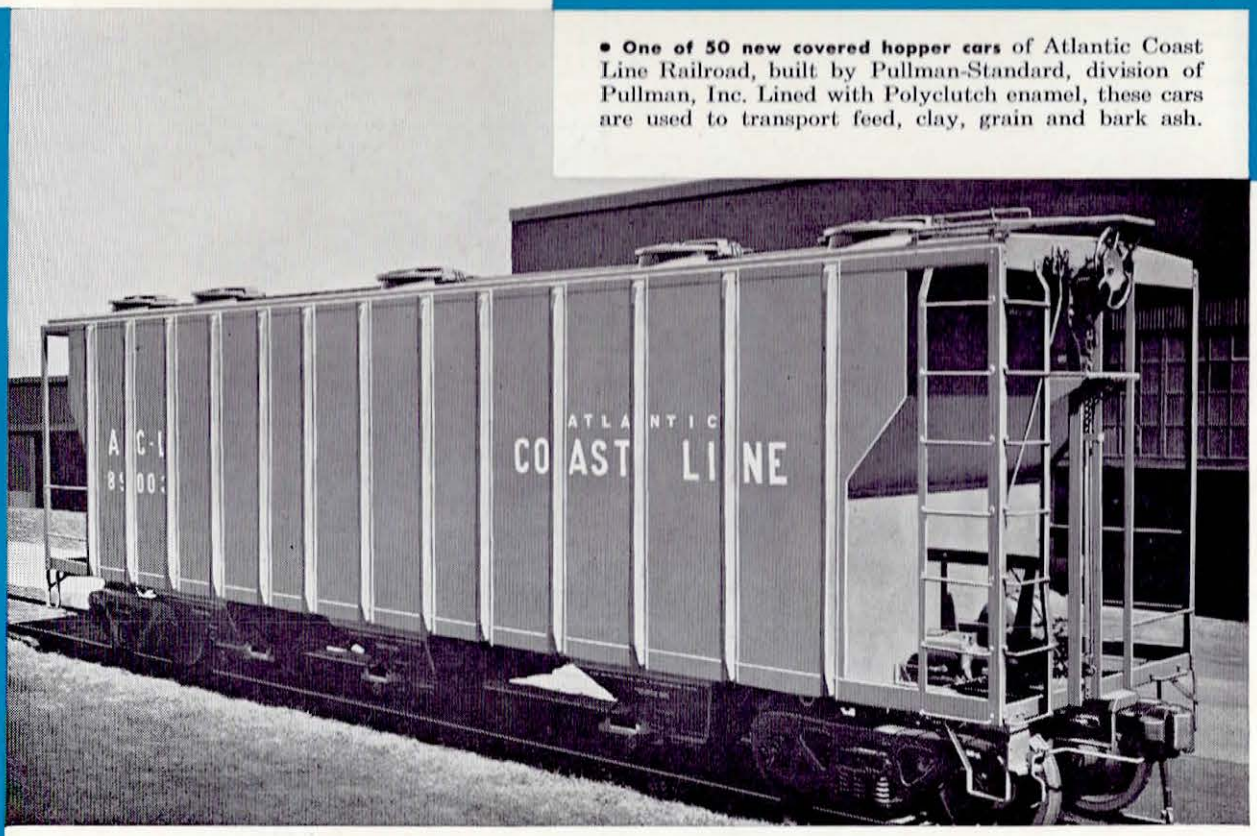

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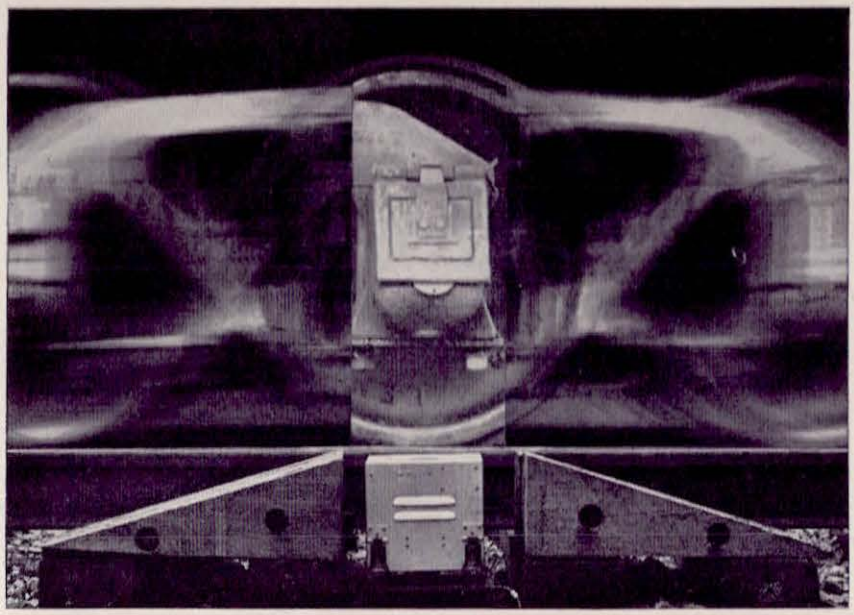

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RAILWAY AGE

WEEK AT A GLANCE

Sept. 11, 1961 • Vol. 151, No. 11

July net continues to show improvement

Railroads earned $20 million in July, up from $10 million in July, 1960. It was the first time in 9 months that earnings exceeded the year-earlier's. Seven-month totals were down..**p. 9**

Non-ops make new demands

Eleven non-operating unions have served notice on railroads that they want a 25¢ wage increase effective Oct. 1, plus contract provisions against force reductions **p.15**

Coordinated mechanical meetings and exhibits

The latest car and locomotive developments are being displayed this week in Chicago. The displays are at the Hotel Sherman and the Illinois Central's 31st street yard **p.18**

Film shows effect of impact on bearings

Most important lesson from the filmed study may be that flat-back bearings are about 75% as efficient as journal stops in controlling impact-caused displacement **p.22**

U25Bs are in Union Pacific service

Four of the 2,500-hp General Electric units (said to be the most powerful four-axle diesel-electric) are operating in the UP's high-speed freight service **p.28**

Modified tamper works fast

The machine was developed because Portland Terminal engineers sensed a need for a tie tamper designed to surface track through leads and along ladders in terminals.....**p.33**

Educating rate-making officers

Up-to-date cost-finding and rate-making techniques can increase railroad profits. Northwestern University's Transport Center plans a two-week seminar on the subject **p.38**

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Railway Age, established in 1856, is indexed by the Business Periodicals Index, the Engineering Index Service and the Public Affairs Information Service. Name registered in U.S. Patent Office and Trade Mark Office in Canada. Published weekly by the Simmons-Boardman Publishing Corporation at 440 Boston Post Road, Orange, Conn. Second-class postage paid at the Post Office at Orange, Conn. James G. Lyne, chairman of the board; Arthur J. McGinnis, president and treasurer; Duane C. Salisbury, executive vice president; George Dusenbury, vice president and editorial and promotion director; Robert G. Lewis, Joe W. Kizzia, M. H. Dick, M. J. Figa, vice presidents.

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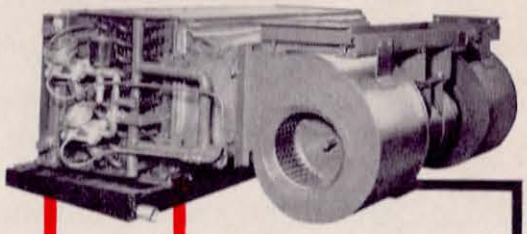

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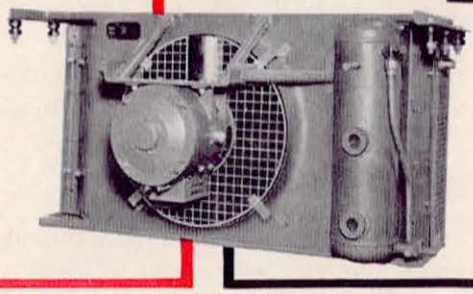

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WEEK AT A GLANCE

Ultrasonics speeds cleaning

Here's how the Louisville & Nashville is using high-frequency sound waves to loosen dirt and grime from its printing telegraph machines p.49

$1 billion transit orders seen

That sum—prophesies Thomas C. Gray, engineering chief of Pullman-Standard's passenger car division—will be spent for transit equipment over the next ten years p.53

New tank cars for 'space-age' ladings

Several high-capacity tank cars have been developed for handling the super-cold liquids which are being used for this country's rocket fuels and oxidants p.56

Transport is a public problem

That was a major theme at the annual meeting of the American Society of Traffic and Transportation — but, the society also heard, carriers and shippers can help themselves p.73

REA opens 'key-point' terminal

A new key-point terminal at Ardsley, N.Y. consolidates the operations of five former express terminals in Westchester County. It is the seventh in a series of such terminals p.82

Overseas market increases for railway suppliers

The market, a Commerce Department spokesman believes, is likely to continue to grow despite the deterrents of currency restrictions and political upheavals p.84

The Action Page—How do you extrapolate?

An extrapolator takes present trends and projects them into the future. Determination and persistence will scatter the extrapolators of gloom for railroads p.88

Current Statistics

Operating Revenues	
7 mos., 1961	$5,172,751,368
7 mos., 1960	5,649,149,714
Operating expenses	
7 mos., 1961	4,202,969,598
7 mos., 1960	4,469,217,816
Taxes	
7 mos., 1961	559,167,016
7 mos., 1960	617,207,528
Net railway operating income	
7 mos., 1961	181,605,194
7 mos., 1960	354,593,181
Net income estimated	
7 mos., 1961	81,000,000
7 mos., 1960	248,000,000
Carloadings revenue freight	
34 wks., 1961	18,132,995
34 wks., 1960	20,374,082
Freight cars on order	
Aug. 1, 1961	10,644
Aug. 1, 1960	26,658
Freight cars delivered	
7 mos., 1961	20,011
7 mos., 1960	35,295

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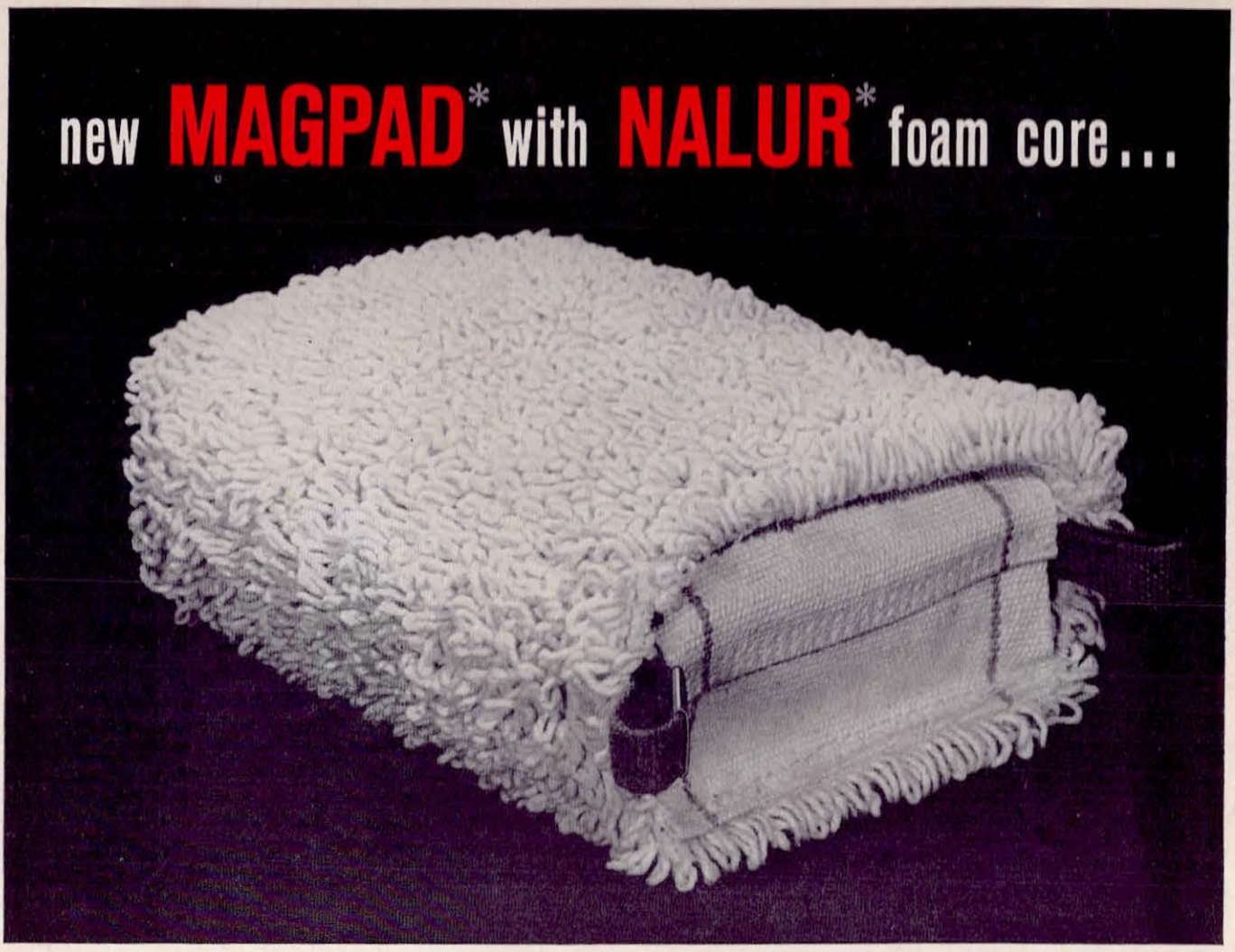

a low-cost lubricator that also has internal wicking and lock-stitched tufted cover

The heart of the new MAGPAD is NALUR—a specially formulated acrylonitrile foam rubber developed and produced by National Lead Company. It is highly resilient, has low oil swell characteristics and excellent resistance to compression set at high temperatures.

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GEARED TO PROGRESS P R I MEMBER

July Net Continues to Show Improvement

► **The Story at a Glance: Railroads earned $20 million in July. A year earlier, earnings were only $10 million. It was the first time since last October that a monthly earning figure had exceeded the figure for the corresponding month a year earlier. Coming as it did after the $43 million earnings posted in June had equalled the 1960 figure, the July increase lent weight to the hope that an upturn might be under way. Hopes that were raised were modest, however; seven-months total estimated income for 1961 of $81 million remained sharply under earnings of $248 million in the corresponding period last year.**

The latest earnings reports for Class I railroads are in. And while they are far from being a cause for complacency in the industry, July's improvement over 1960 figures for the same month suggest that the prospect for 1961 as a whole is improving.

By AAR figures, Class I railroads had an estimated net income in July, 1961, of $20 million, which was twice as much as the $10 million earned in July, 1960, though still under the $31 million earned in July, 1959. July figures were under the $43 million earned in June (both in 1961 and in 1960), but July is traditionally not as good a month for railroad earnings, particularly for those of lines serving heavy industry, because of the large number of on-line plants shut down for annual vacation.

July's improved earnings were achieved without a corresponding jump in revenues. Much of the earnings improvement resulted from a sharp reduction in railroad operating expenses —in part due to deferred maintenance.

The seven-month figure (which included deficits piled up in January, February, March and April when Class I roads as a whole operated in the red) is less encouraging, although it reflects predictions that the downturn in steel, coal and other basic industries that furnish the bulk of rail traffic, would not end early in the year. Class I railroad net income for the first seven months of 1961 was estimated at $81 million, AAR's Bureau of Railway Economics figures show. This compares with a net income of $248 million for the corresponding period of 1960 and of $339 million for the corresponding period of 1959.

Net railway operating income of Class I railroads in July, before deduction of interest and other fixed charges, was $36 million, as compared with $24 million in July, 1960 and $49 million in July, 1959. For the seven-month period in 1961, net railway operating income totaled $182 million. For the 1960 period, net railway operating income was $355 million; for the 1959 period, it was $462 million.

In the twelve-month period ending with July, 1961, the rate of return on railroad investment averaged 1.5%.

Total operating revenue in the first seven months of 1961 amounted to $5,173,000,000. This compares with $5,649,000,000 for the same period last year, a decrease of 8.4%. Operating expenses for the first seven months of 1961 amounted to $4,203,000,000, compared with $4,469,000,000 in the corresponding period of 1960, a decrease of 6%.

Thirty-five Class I railroads—22 in the Eastern District, 7 in the Southern Region and 6 in the Western District —failed to earn their fixed charges in the first seven months of the year.

Class I railroads in the East rang up an estimated deficit of $9 million in July (compared with a profit of $3 million in June, a deficit of $12 million in July, 1960 and a deficit of $300,000 in July, 1959). For the seven-month period, the hard-hit eastern carriers had an estimated deficit of $82 million, compared with a net income of $53 million for the corresponding period last year, and a net income of $98 million in 1959.

Class I roads in the South had an estimated net income for July of $4 million, compared with $3 million in July, 1960 and $7 million in July, 1959. For the seven-month period, the southern roads had estimated earnings of $33 million, down from $46 million in the 1960 period and $56 million for the 1959 period.

Western District Class I roads earned an estimated $25 million in July compared with an estimated $19 million in July last year and $24 million in July, 1959. For the seven-month period, the western roads had an estimated income of $130 million, compared with $149 million for the corresponding period of 1960 and $185 million for the same period of 1959.

With these figures in the background, railroad analysts are hesitant about predicting a sudden and sharp

Revenues and Expenses, Class I Railroads

	1961	1960	1959
JULY			
Total operating revenues	$ 754,161,042	$ 759,245,262	$ 821,510,212
Total operating expenses	606,591,637	628,871,236	658,498,911
Taxes	77,170,991	74,487,929	85,788,103
Net railway operating income (earnings before charges)	35,636,982	23,942,639	48,796,586
Net income, after charges (estimated)	20,000,000	10,000,000	31,000,000
7 MONTHS ENDED JULY 31			
Total operating revenues	$5,172,751,368	$5,649,149,714	$5,846,964,866
Total operating expenses	4,202,969,598	4,469,217,816	4,562,546,451
Taxes	559,167,016	617,207,528	632,589,611
Net railway operating income (earnings before charges)	181,605,194	354,593,181	462,418,271
Net income, after charges (estimated)	81,000,000	248,000,000	339,000,000

improvement in the earnings outlook for the year. Yet there seems to be agreement that an upturn is coming.

And the July figures seem to support the recent prediction by Pierre Bretey of Hayden, Stone & Co. in a review of the railroad industry: "Now that signs point to a worthwhile recovery in general business throughout the balance of 1961 and extending into 1962, and now that prospects point to favorable weather conditions which should provide bumper crops, earnings of the Class I carriers, despite poor results shown to date, should exceed those of 1960, possibly by a modest margin."

U.S. C of C Wants Governors Conference on Railroad Ills

The Chamber of Commerce of the United States has recommended that President Kennedy call a conference of governors "from those states in which the railroad situation is, or shows signs of becoming, a serious problem."

The recommendation was in the presentation the Chamber made to Secretary of Commerce Hodges, in response to the secretary's request for proposals from which he can develop recommendations for President Kennedy's consideration as he shapes the transport message he plans to send Congress next year (RA, Sept. 4, p. 32). The chamber made several other proposals, including calls for:

Coordination of federal policy through the undersecretary of commerce for transportation.

Fairer taxation of carriers at state and federal levels.

An end to governmental competition with carriers.

Legislation to stop illegal and borderline operations of psuedo private carriers.

The problem of "excessive taxation" of common-carrier properties should be among subjects discussed at the proposed governors' conference, the chamber said. It also said:

"It is of immediate importance that steps be taken promptly aimed at preventing further financial deterioration of the transportation industry. The main objective would be to prevent any new bankruptcies or receiverships. Prompt and dynamic action by the President could have a significant impact on the marginal carriers."

Other chamber proposals call for a complete reevaluation of present transportation legislation; a program of "realistic depreciation" for transportation equipment; faster handling of merger applications; a presidential order requiring government agencies to use licensed carriers; and a tightening of the Interstate Commerce Act's so-called agricultural exemption which leaves for-hire carriage of farm products free of regulation.

Railroads Get Reprieve In Ex-Barge Rate Case

Railroads now have until October 20, 1961 to comply with a decision of the U.S. Supreme Court which held that rail rates on traffic moving out of river and lake ports must all be on the same basis—whether the traffic came into the ports by rail or barge. This new deadline was set by the ICC last week.

The previous deadline was September 5, but railroad tariffs filed with that effective date were rejected by the Commission's staff on the basis of findings that they failed to meet re-

(*Continued on page 16*)

WATCHING WASHINGTON WITH WALTER TAFT

• **DAMAGING OF FREIGHT** being moved by for-hire carriers in interstate or foreign commerce will soon become a federal offense. Legislation making it so has been passed by Congress and is expected to be signed by President Kennedy.

THE LEGISLATION, which encountered no opposition, was proposed after new automobiles shipped by railroad, in piggyback service and on rack cars, had been damaged by acid sprayed on them while in transit. Railroads were principal sponsors of the legislation, but it will apply also to shipments by interstate trucks and aircraft. Property moving by water carriers was not included because it is similarly protected by present law.

PRESENT LAW also makes it a federal offense to damage the equipment of an interstate carrier. The need for embracing damage to lading as well was pointed up by the development of new equipment, like the rack car, which leaves freight out in the open where it can be damaged or destroyed without doing any material damage to the car. Maximum penalty will be a $5,000 fine or a 10-year prison term, or both.

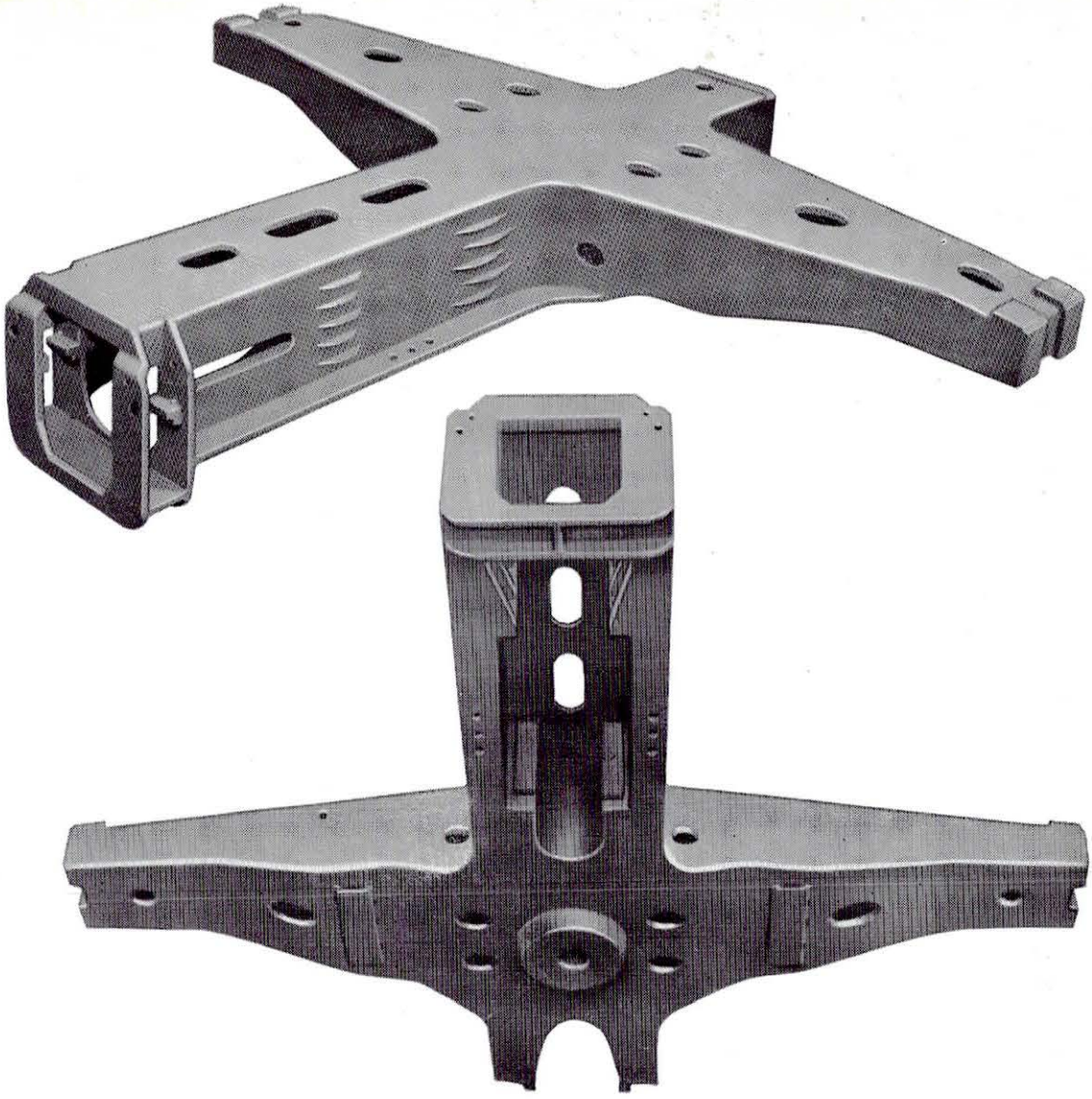
• **RAILROAD RETIREMENT ACT** will be liberalized by another bill which Congress sent to the President last week. The liberalizer will permit railroaders who lack 30 years of service to retire at age 62. Annuities are now paid to those younger than 65 only if they have 30 years of service or if their retirement is on the basis of disability.

ANNUITIES of 62-year-olds taking advantage of the new rule would be reduced on an actuarial basis from what they would receive if they waited until they were 65. Other provisions of the bill will ease rules covering eligibility for spouses' annuities.

RECENT LEGISLATION provided similar arrangements for employees of industry generally who are covered by the Social Security Act. The railroad bill was passed by the Senate Sept. 1, and favorable House action came on the 6th.

SPONSORED by the Railway Labor Executives' Association, the bill was unopposed. The AAR advised Congress that it has no objection to the retirement-at-62 phase, and it has no position on easing eligibility rules for spouses' annuities.

ESTIMATED COST of the retirement-at-62 plan is $2,000,000 a year. Cost of liberalizing spouse-annuity rules would be "insignificant," supporters of the bill told the Senate.



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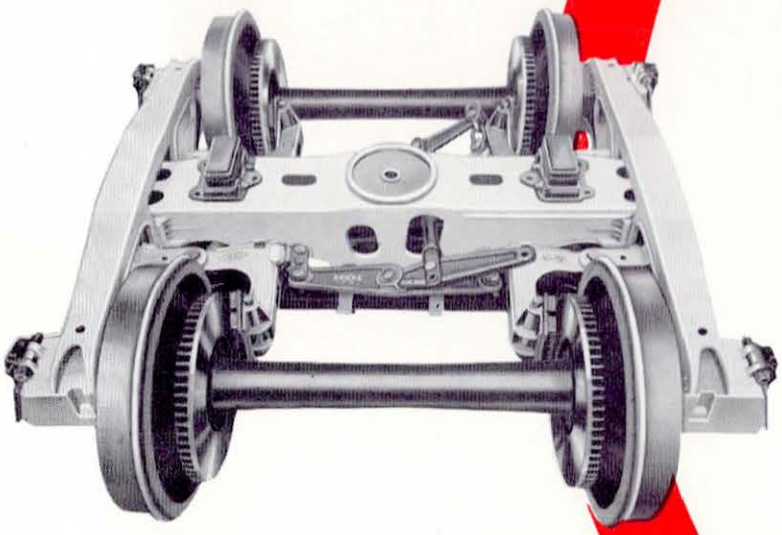

BRA

Union Tank Car Company's 45 ton Tank Car for carrying 11,000 gallons of liquid propane gas, ICC class 105A300W, equipped with Buffalo Single Disc Brake-X. Will be at the track exhibit.

Here it is...

The Buffalo Single Disc Brake-X.

A simple mechanical off wheel brake designed to last the life of the freight car.

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Buffalo Single Disc Brake-X can be applied to all approved types of four wheel trucks providing economical off wheel tread braking. Brake blocks under normal operating conditions have a service life of better than 100,000 miles.

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The proven economies being derived from the application of Buffalo Single Disc Brake-X should be given consideration in your base specification for special high mileage, high speed, hot shot cars.

Remember — Today's decision determines the economy of tomorrow and the future.

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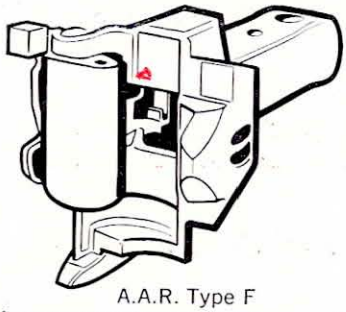
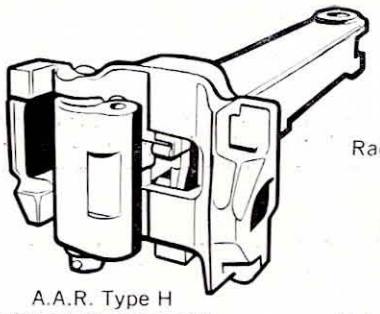


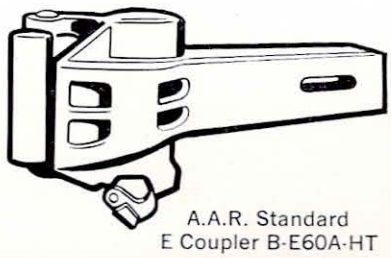
A.A.R. Type F
Interlocking Coupler F70



A.A.R. Type H
Tightlock Coupler H80

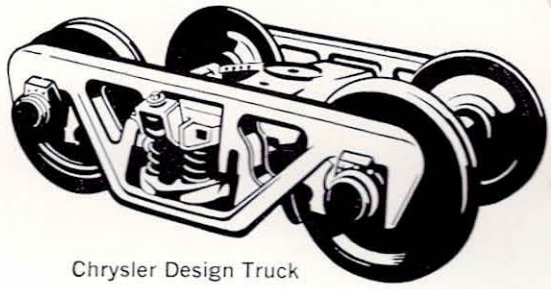
Radial Connection Y25A

Yoke Y65 for
Twin Cushion Draft Gear

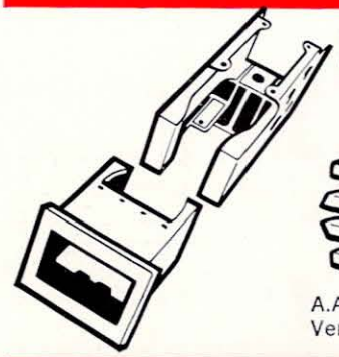


A.A.R. Standard
E Coupler B-E60A-HT

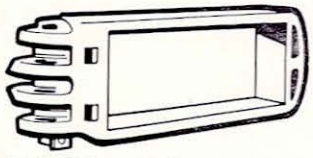
Built into each product—
Symington reliability



Chrysler Design Truck



Striking Casting and
Center Filler—Cast Weld
Design, Stress-Relieved



A.A.R. Alternate Standard
Vertical Plane Swivel Yoke Y30

Seventy-five years' experience in manufacturing railway equipment, with constant emphasis on research and development, assures you both reliable performance and long service life in every Symington product—from a single snubber spring to complete truck assemblies.

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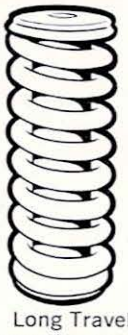
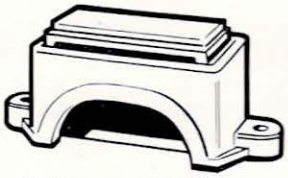
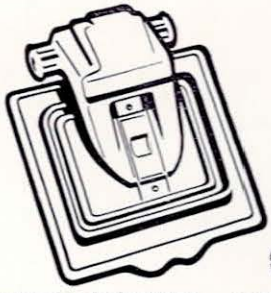
Spring Snubber Group



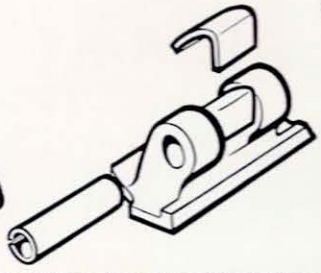
Long Travel Snubber for
Locomotives and Passenger Cars



Rubber Type Resilient
Side Bearing



Composite Articulated
Journal Box Lid



Journal Box Hinge Lug Wear Plate
and Self-Adjusting Bushing

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Non-ops Make New Demands

► **The Story at a Glance: Eleven non-operating rail unions have served notice on the railroad industry that they want a 25-cent-an-hour wage increase effective Nov. 1. The Section 6 notices also ask a contract provision prohibiting force reductions with less than six months advance notice.**

An estimated $274 million would be added to the industry's annual payroll if the 25-cent-an-hour demand were granted to the 600,000 non-operating employees.

With the dust still unsettled from the 1959 wage movement, the non-ops have fired the opening salvo in the 1961 national wage and rule movement (RA, Sept. 4, p. 7). General chairmen of the Eleven Cooperating Railway Labor Organizations participating in the joint movement served Section 6 notices on the individual carriers Sept. 1. They made their demands effective Nov. 1, the deadline set by the agreement reached in the 1960 settlement.

RLEA Chairman George E. Leighty, who is also serving as chairman of the unions joining in the 1961 demands, said that the railroad unions have decided that it is necessary to correct the present wage inequity for railroad workers. He blames the "inequity" on the three-year moratorium on wage increases that preceded the 1959 wage demands and the "disappointing' settlement arrived at last year.

"We accepted the settlement recommended last year by the Presidential Emergency Board reluctantly, realizing that those recommendations had been based on a pattern that did not fairly apply to our situation. With due regard for the public and our desire to avoid a transportation tie-up, the non-operating workers sacrificed their just demands and went along. This year, however, we intend to get a fair wage settlement."

The "fair wage settlement" envisioned by Mr. Leighty and the non-ops would cost the railroads an estimated $274 million annually in added wage costs. The figure would jump to $462 million if the sought-after increase were granted to all railroad employees.

A job stabilization demand gets equal billing with wage increases in the non-op demands. They propose to replace the present 16-hour layoff notice in effect on most roads with a rule that would require six-months advance notice before a force reduction, except in certain emergency situations.

Mr. Leighty said that the non-ops, despite their desire to concentrate on wages, feel that some action must be taken to deal with the problem of mass unemployment in the railroad industry. He called the job stabilization demand the "first step toward meeting the problem of railroad unemployment."

As spelled out in the non-op notices the proposed rule reads:

"Prior to any reduction in force or any abolition of a position or positions resulting in reduction in the number of employees in any seniority district or other unit covered by a seniority roster, all employees who may be affected by such reduction in force or abolition of position will be given not less than six months advance notice thereof. However, this rule shall not operate to require more than sixteen hours such advance notice to each employee who may be affected under emergency conditions such as flood, snow, storm, hurricane, earthquake, fire or strike, provided the carrier's operations are suspended in whole or in part and provided further that because of such emergency the work which would be performed by the incumbents of the positions to be abolished or the work which would be performed by the employees involved in the force reductions no longer exists or cannot be performed. Whenever forces are reduced or positions are abolished with less than six months advance notice pursuant to the preceding sentence all employees affected thereby shall be recalled to service as soon as the suspension of the carrier's operations has ceased or the work of the employees

CB&Q, PRR, USDA Test Refrigeration Systems

Four different types of refrigeration systems and vehicles used for meat hauling recently underwent extensive tests on a cross-country run from Colorado to Philadelphia. Burlington, Pennsylvania and the U. S. Department of Agriculture cooperated in the project, which was designed to measure the relative efficiency of the four test units: a refrigerator car utilizing ice and a new Pacific Fruit Express Preco Tempco fan system; a PFE meat-rail-equipped 50-ft mechanical refrigerator; a Burlington piggyback trailer with foamed-in-place polyurethane insulation; and a CB&Q TOFC trailer with conventional insulation. Special test instruments, installed in a Burlington dynamometer car, recorded temperatures at 20 thermocouple locations within each refrigerator car and piggyback trailer.

affected can again be performed, and any notice of force reduction or abolition of position pursuant to the preceding sentence shall state that employees affected will be so recalled to service. Any rule, agreement or understanding now in effect more favorable to the employee is preserved and undisturbed by this rule."

Mr. Leighty explained that the emergency exception in the proposed rule, adopted in the national agreement of August 1954, was being retained despite objections to its present form to "avoid diverting attention from the merits of the basic six-months' notice requirement" by renewing any controversy over proper notice in event of an emergency.

The current wage movement is not expected to reach national handling before sometime in October. The Railway Labor Act provides for consideration of the demands on individual properties within thirty days of receipt of Section 6 notices.

RAILROADS GET REPRIEVE

(*Continued from page 10*)

quirements of the court decision and the order issued by the Commission to implement that decision. The railroads then pleaded for more time, lest they become liable for non-compliance penalties.

This is the case, docketed at the Commission as No. 30744, wherein the court held that rail rates from the ports could not deprive barge-rail shippers of any "saving" they gain by using barge service inbound

The case marked the culmination of a water-carrier campaign which has succeeded in getting more and more ex-barge traffic the same outbound rates from the ports that apply on ex-rail traffic.

Alms or Restitution?—an Editorial

Recognition by the ICC that passenger operations of the New Haven and some other railroads must have supplementary revenue from some source or another, is timely and welcome. But why should these railroads be put into the shameful position of mendicants, being kept alive by grudging hand-outs of alms from the public treasury? (RA, September 4, p. 24).

The saying has it that you don't look a gift horse in the mouth—and maybe it's unkind to question the Interstate Commerce Commission's method of erasing the red ink from commuter operations of the New Haven and other railroads i.e., by prescribing for them a direct dole from the federal treasury. But the railroads that provide passenger service essential to the continued existence of our largest communities are doing a job which is economically on exactly the same plane as the supply of electricity to light city streets or of water for fighting fires.

The money municipalities pay to utility companies for electricity and water is tendered as a commercial compensation for service rendered. It isn't doled out to them from the poor box.

All power to the railroads that are able to keep going the kind of suburban service that their cities demand, and collect the full cost from direct users of the service. There are some places, however, where acceptable service apparently cannot be sustained on this basis—and where tax relief, station maintenance by municipalities, or some provision for payment by other beneficiaries than the direct users, is required.

If state and local goverments cannot find all the money necessary—after the highway-building binge they are indulging in—to relieve suburban service of inequitable taxation and the cost of fancy stations, that is their problem. If somebody is going to go rattling the tin cup at the door of the federal treasury, then it ought to be state and local governments—not the railroads.

The willingness of some hard-pressed railroads to accept financial relief in whatever form it is offered is understandable. However, railroads are not a Tobacco Road family. They are, basically, a sound industry—able to offer most freight service (and some passenger service) at much lower total economic cost than any other transportation method.

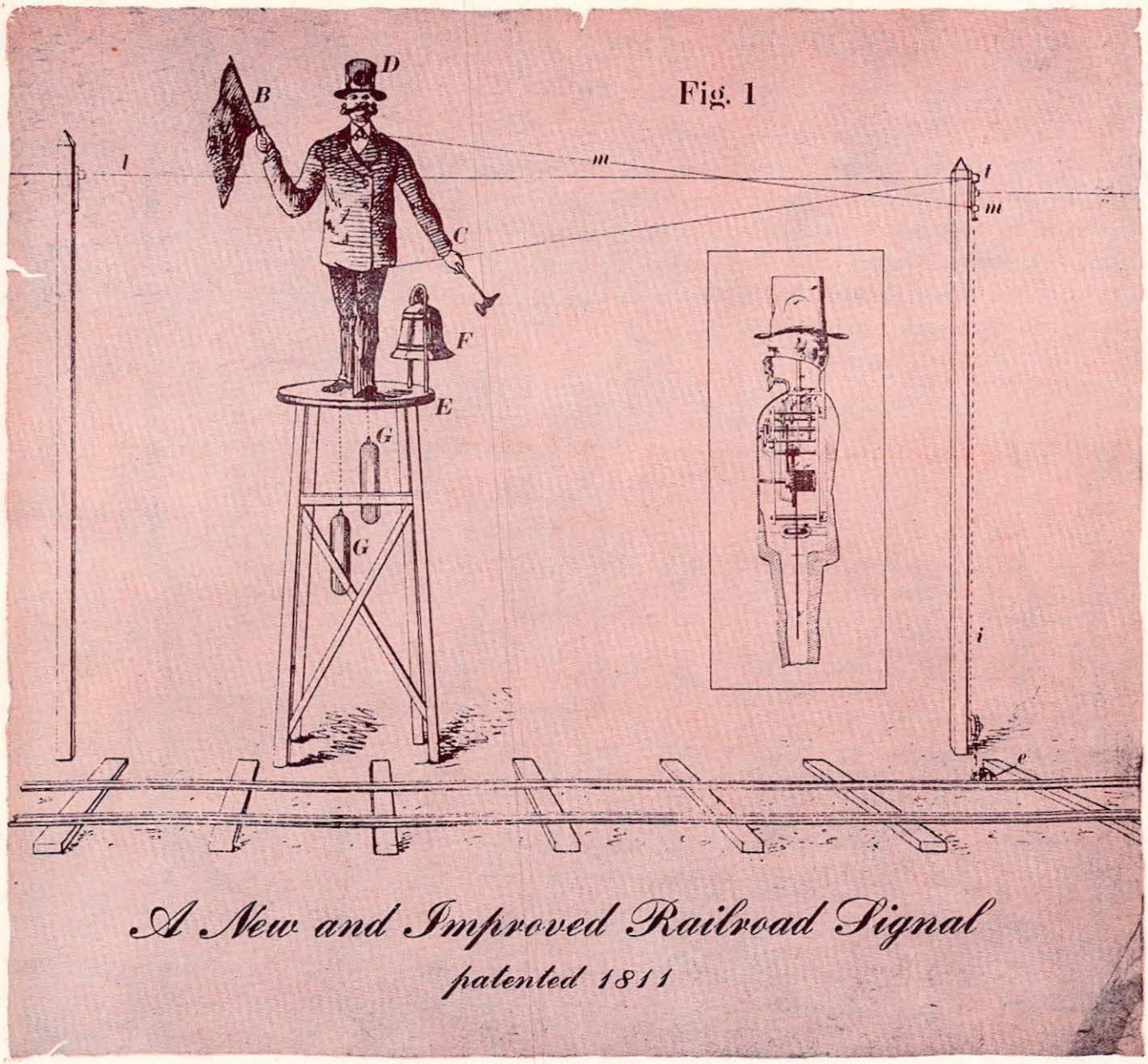
With this foundation to build upon, the railroads have the same potential for growth and prosperity that any other major industry has. Their troubles arise solely from gross political mistreatment—overtaxation, unequal and inequitable regulation, archaic working rules, requirements to continue providing community services that are not self-sustaining from present revenues.

The state of Connecticut wrapped its colossal turnpike around the New Haven's main line, like a boa constrictor around a donkey. Massachusetts did the same thing to the B&M and B&A—and the federal government has fostered the envelopment of railroads almost everywhere by its interstate highway system, now under construction. Then the same governments, at all levels, that have done these things to the railroads, seem to believe that railroads should take the pauper's oath, in return for sustenance barely sufficient to keep them alive. What gall!

Absolute equality in every detail of regulation (or freedom from regulation) of all forms of transportation, including private carriers; equal taxation of all forms of transportation by assessments on their traffic rather than on transportation property; and establishing the same controls and compensatory payments on public investment in transportation as now exist on that which is privately financed — these honest steps by government would restore the economic health of railroads, and of all common carriers. They would enrich the public treasury instead of depleting it. It would be a cure, not a palliative.

President H. C. Murphy of the Burlington showed (RA, June 27, 1960) that his road, in freight service alone, earns $51,000,000 less net revenue before income taxes—than it would earn if it were treated, tax-wise and otherwise, as competing transportation is treated. The ICC, in effect, admits unjust treatment of the railroad by government, but seeks to discharge the obligation at a bargain price, making the aggressor appear as a benefactor instead.

If Uncle Sam insists on continuing to practice socialism in transportation as he is doing now, then he ought at least to come out openly and offer matrimony, with a suitable dowry, to the gal he has wronged. Trying to crawl out of his responsibility by putting the victim of his self-indulgence on the relief rolls cannot be accepted as a substitute for indemnity and expiation. Though a famishing sister cannot refuse relief in whatever form it is proferred, there are plenty of others, not yet so deeply involved, who should pull the Santa Claus' whiskers off of the old roué and shame him into offering genuine restitution—not in the form of charity, but as an indemnity.



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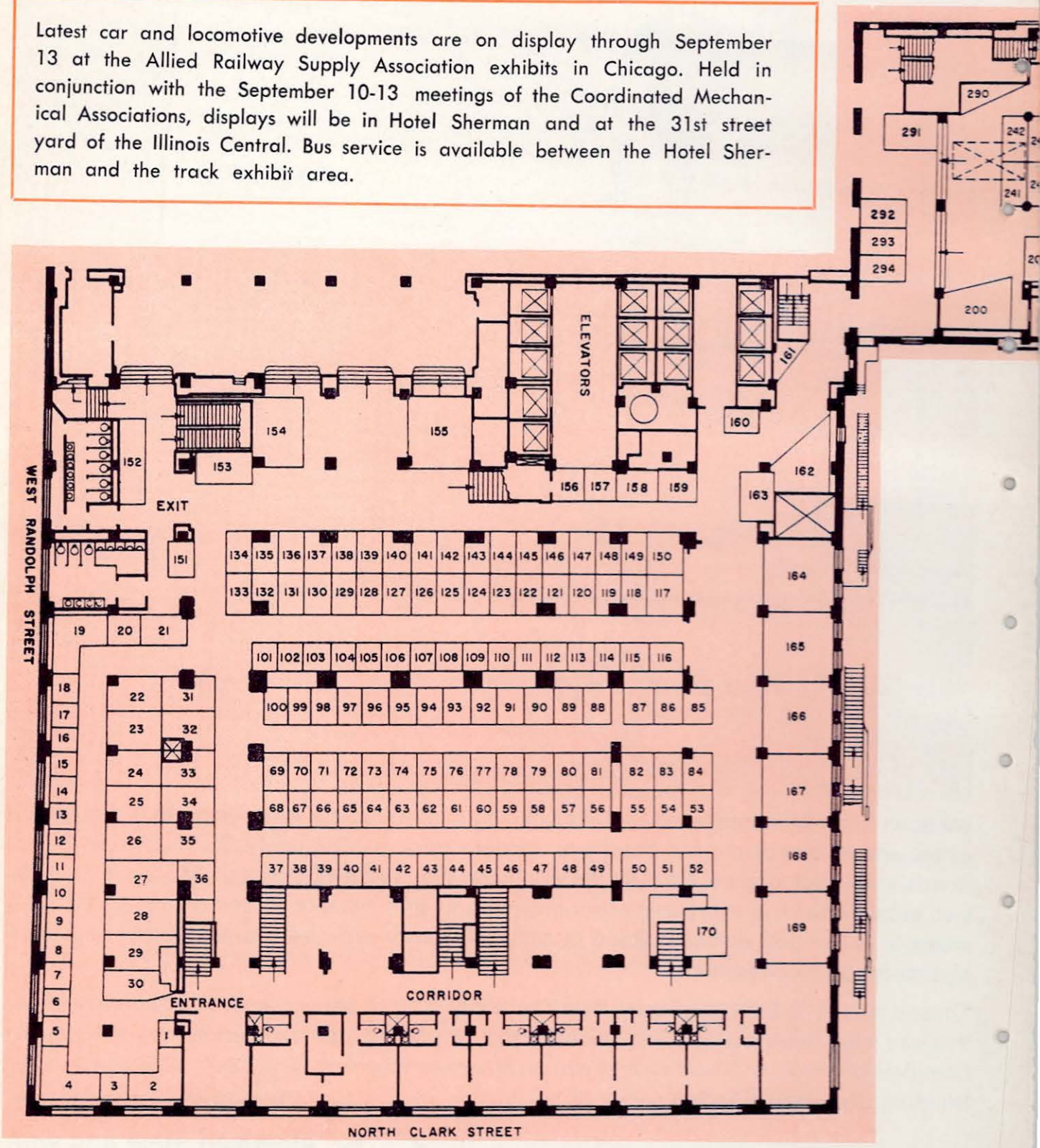
Coordinated Mechanical Meetings

Latest car and locomotive developments are on display through September 13 at the Allied Railway Supply Association exhibits in Chicago. Held in conjunction with the September 10-13 meetings of the Coordinated Mechanical Associations, displays will be in Hotel Sherman and at the 31st street yard of the Illinois Central. Bus service is available between the Hotel Sherman and the track exhibit area.



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Aeroquip Corp.	78 to 81
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American Brake Shoe Co.	37 to 41
American SAB Co.	166
American Steel Foundries	230 to 234; 249 to 253
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Barco Manufacturing Co.	260-261
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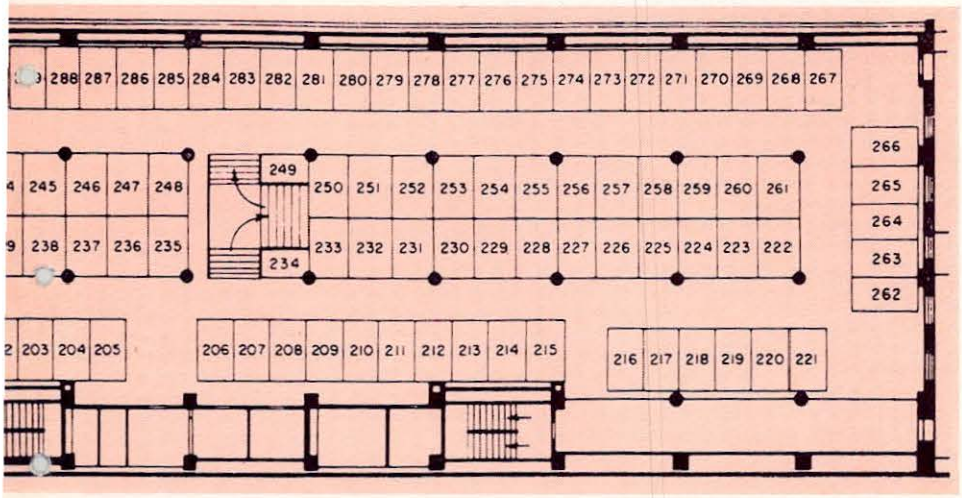
& Exhibits in Chicago



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Buffalo Brake Beam Co. 4-N
Clark Equipment Co. 3-N
Dana Corp. 6-N
Doweloc Div., B. F. Frampton & Co. 6-N
Enterprise Railway Equipment Co. 5-N
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Landreth Industries 6-N
MacLean-Fogg Lock Nut Co. 4-S
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National Castings Co. 5-N
North American Car Corp. 1-S
Pacific Car & Foundry Co. 1-N
Paragon Bridge & Steel Co. 1-N
Peerless Equipment Division of Poor & Co. . 1-S
Pettibone-Mulliken Corp., Mercury Div. ... 1-S
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Reynolds Metals Co. 4-N
Ross & White Co. 1-S
Schield Bantam Co. 2-N
Sparton Railway Equipment
Div., Sparton Corp. 2-N
Standard Car Truck Co. 1-S
Stran-Steel Corp., Division of
National Steel Corp. 6-N
Superior Car Door Co. 4-N
Thrall Car Mfg. Co. .....1-N and 2-N
Transportation Specialties Co. 3-N
Union Asbestos & Rubber Co. 3-N
Union Tank Car Co. 4-N
United States Steel Corp. 2-N
Westinghouse Air Brake Co. 3-N
Whitehead & Kales Co. 3-N
Youngstown Steel Door Co. 4-S

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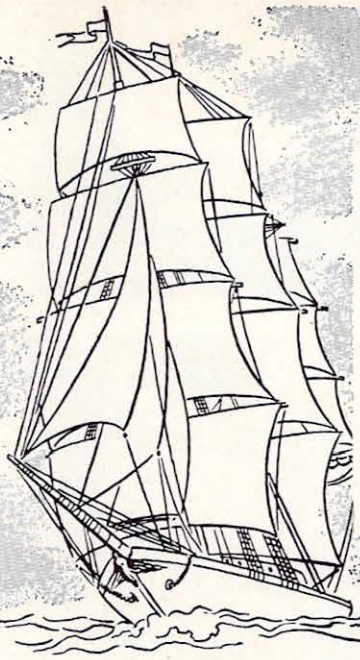

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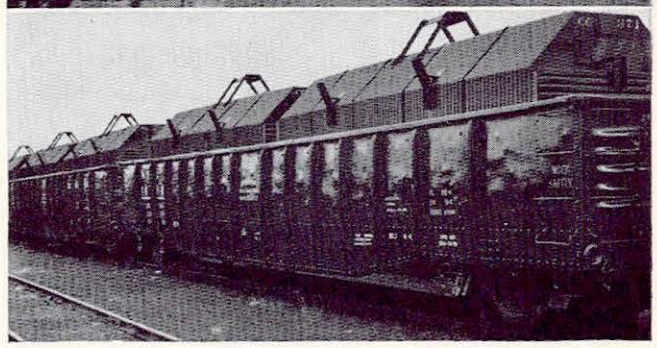

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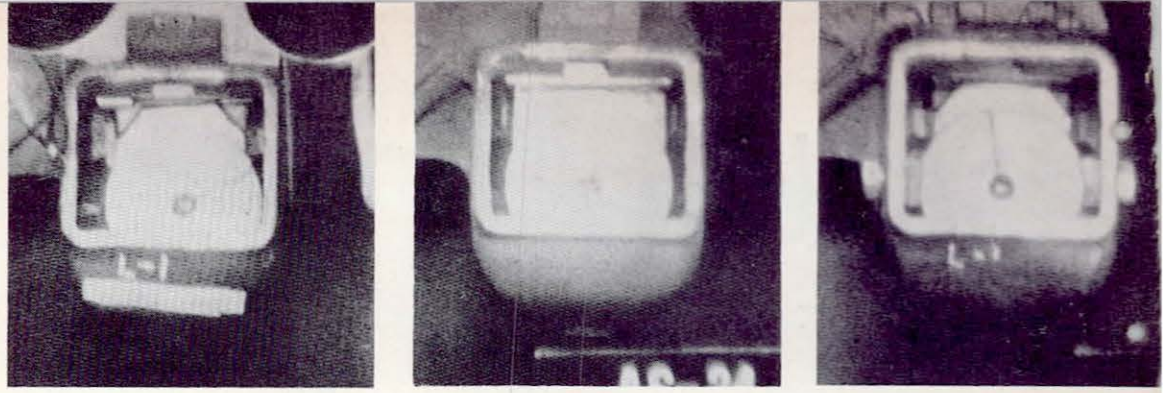
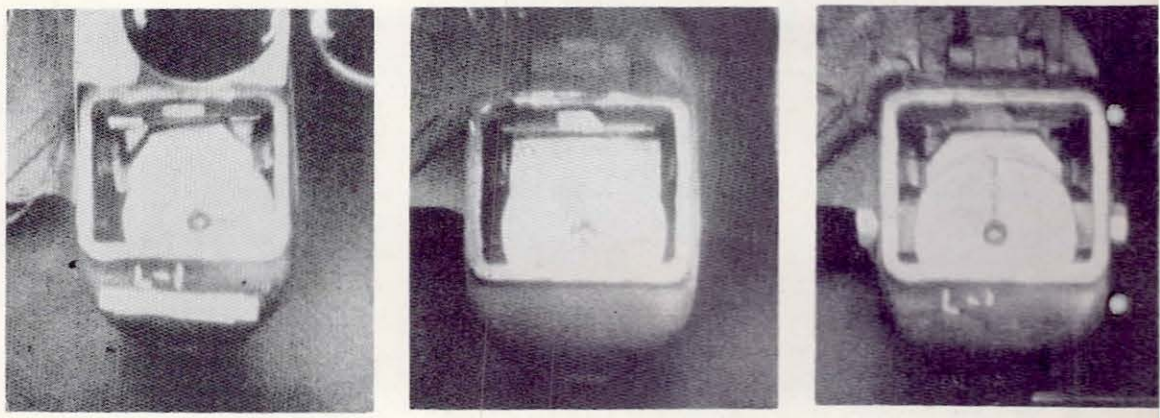
4:00 MPH

Impact at this speed produced noticeable displacement of standard steeple-back bearing assembly (left), practically no movement of flat-back and journal-stop units.



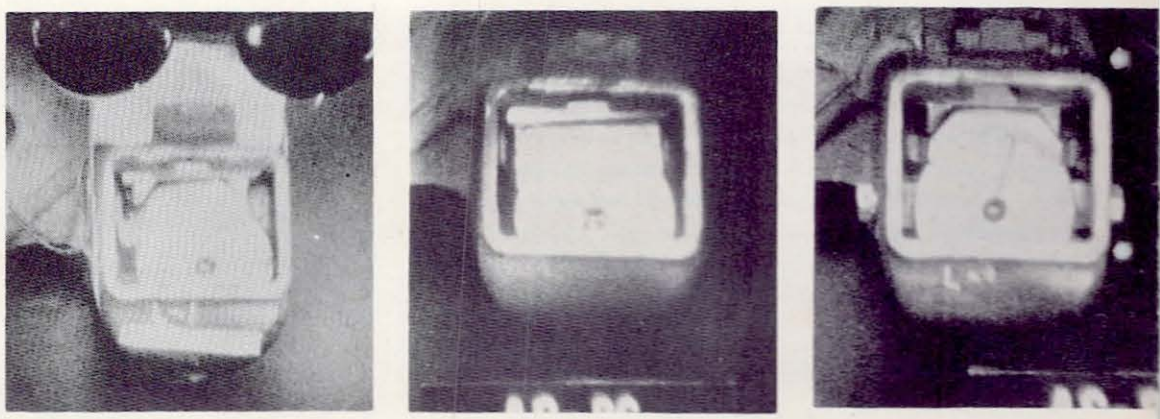
5:00 MPH

Vertical and angular displacement of bearing and wedge and movement of journal to right of box is evident in standard bearing assembly at left; others show good stability.



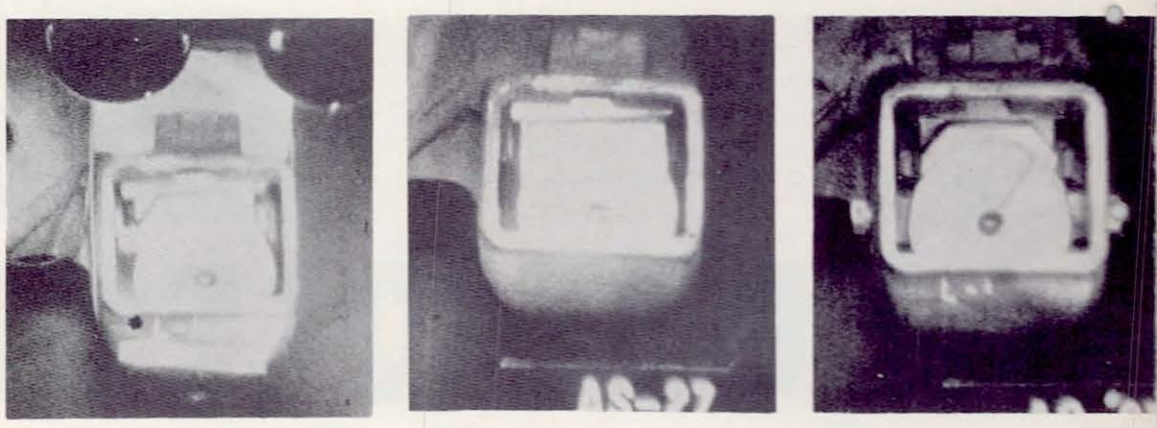
6:00 MPH

At this speed the impact produced increased movement of standard assembly, some slight displacement of flat-back bearing, practically none of journal-stop assembly.



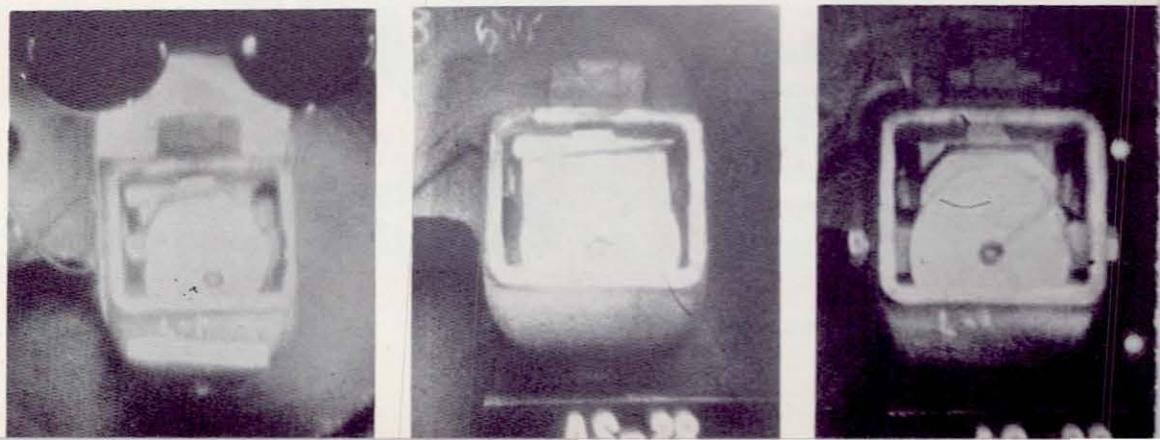
7:00 MPH

This series of impact tests showed how the increased longitudinal forces caused displacement of standard bearing, separated wedge and bearing in other two assemblies.



8:00 MPH

At maximum speed used in high-speed filming the standard bearing assembly is badly distorted while flat-back and journal-stop assemblies show their better stability.



AAR Film Shows Effect Of Impact on Bearings

A high-speed motion picture study of the effect of impact on journal bearing assemblies has been released by the Mechanical Division of the Association of American Railroads.

High-speed cameras taking photographs in the order of 1,500 frames per second were used to record the impact data. When these are projected at the standard speed of 32 frames per second, the results of impacts become quite clear.

The effects of impact at relative speeds of 4,5,6,7, and 8 miles per hour were recorded for each of three bearing assemblies—standard solid bearing, flat-back journal bearing, and the standard bearing with journal stops.

The study clearly establishes the severe vertical and angular displacement that occurs in the standard bearing assembly at speeds above six miles per hour. It also convincingly demonstrates the ability of journal stops to prevent displacement at all the recorded speeds. But, perhaps more important, it also indicates that flat-back journal bearings effectively prevent displacement at speeds up to five miles per hour and that at the higher speeds flat back bearings are about 75% as efficient as journal stops in controlling displacement.

The film was produced by the Mechanical Division in cooperation with the Technical Advisory Committee of journal bearing manufacturers. It will be shown during the September 11-13 meeting of the Car Department Officers' Association at the Hotel Sherman, Chicago.

Technical Advisory Committee members who contributed to production of the film are American Brake Shoe Co., Canadian Bronze Co., Ltd., Johnson Bronze Co., Magnus Metal Corp., and Railway Service and Supply Corp.

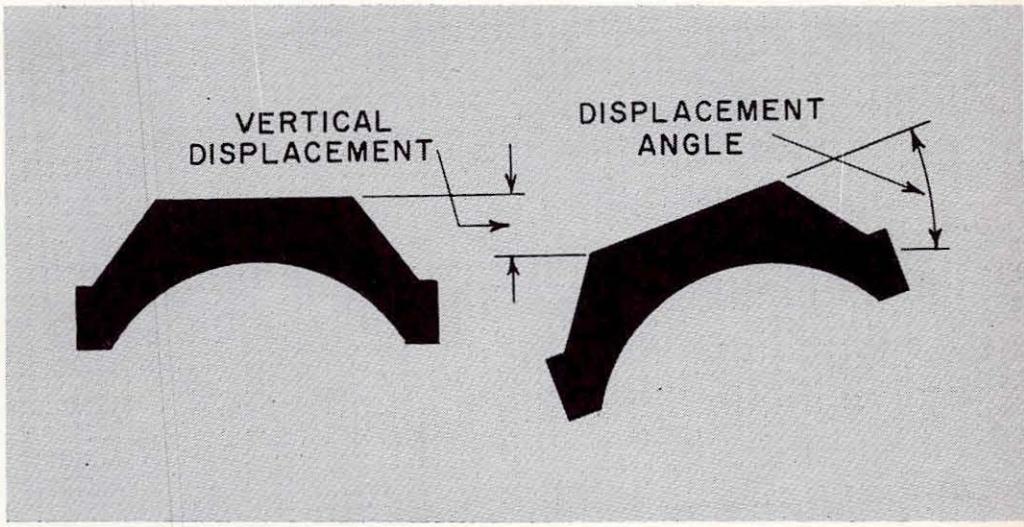
The Norfolk & Western, which pioneered in the development and test of flat-back bearings for freight cars, had applied flat-back bearings to 1,506 cars as of July 31, 1961. The original test applications had been made to one hundred 70-ton hopper cars in 1958. To July 31 the N&W had accumulated approximately 21,000,000 car miles —or an average of 14,000 miles per car—with flat-back journal bearings, without a hotbox.

At least twenty-two other railroads and three private car companies have also made installations of flat backs to various type cars. Details of performance on these other roads are not available at this time.

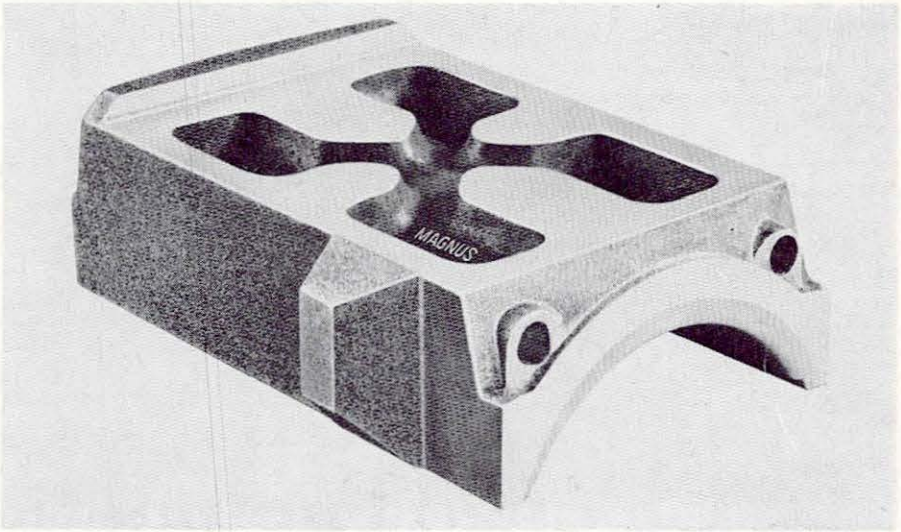
All flat-back applications have been made under the authorization of the Mechanical Division. Reports of failures and car months of operation will probably be available through the Mechanical Division at a later date, after data have been received.

Magnus Metal Corporation and American Brake Shoe Company currently are authorized by the Mechanical Division to furnish flat-back bearings to railroads wishing to participate in the tests or to extend present test applications.

A total of 47 railroads and 10 private car companies have made test installations of journal stops with marked success in every instance. Journal stops, however, involve installation expense as well as an additional investment for the stops themselves.



MAXIMUM vertical displacement of standard steeple-back bearing assembly was .71 in. at nominal 8:00 mph impact speed; maximum angle was 14 deg.



FLAT-BACK BEARING is flat over entire width at mating surface with wedge to minimize vertical separation and prevent tilting of bearing under impacts.

All pictures in left-hand column on facing page are of standard bearing assembly; center column shows flat-back bearing and right-hand column is standard bearing with journal stops. Impact speeds shown are nominal, as speeds varied slightly for each group. Photographs, from high-speed film, were furnished by Magnus Metal Corporation.

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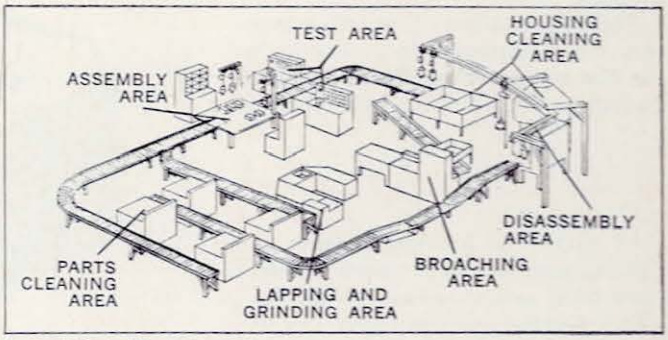

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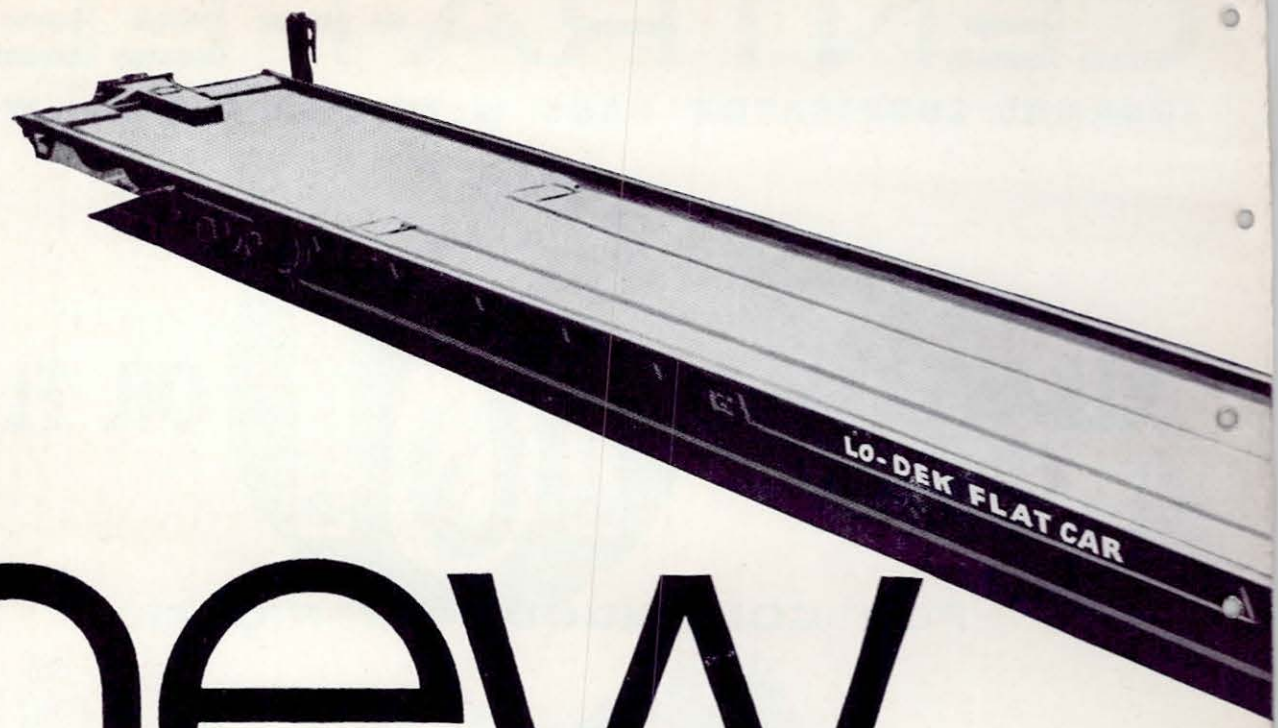

new 89 FOOT FLAT NOW

P-S LO-DEK 89

Pullman-Standard is now offering its LO-DEK Flat Car in a new, longer, even more versatile length: 89 feet. This means that the lowest flat car on the market (31 inches from rail to deck) is now also the longest.

The low 31 inch profile of the LO-DEK has proved its substantial merit to a number of major carriers. Movement of fully loaded tri-level and bi-level auto racks, highway auto transporters and high cube 13′-6″ trailers is now possible despite restricted right-of-way clearances.

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Already more than 400 89 foot LO-DEKs have been built or placed on order for use in the growing piggyback movement of new automobiles, thus adding another dimension to the ways in which the nation's railroads are providing new and better service to their shippers.

For additional information on the new 89 foot LO-DEK Flat Car contact a Pullman-Standard sales representative or write for a copy of our new LO-DEK brochure. It's yours on request.

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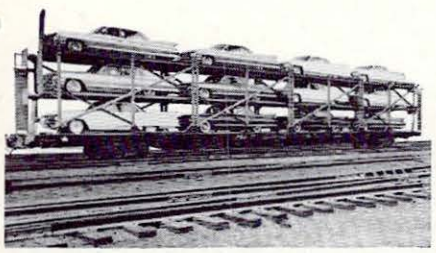
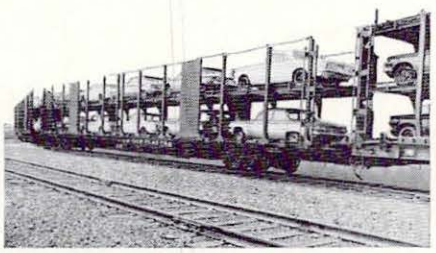


LO-DEK 89 and TRI-LEVEL AUTO RACKS—The LO-DEK 89 accepts all makes and models of tri-level auto racks. The increased deck length makes possible the application of new design racks with greater length and overhead clearance and permits hauling 12 standard and 15 compact autos.



LO-DEK 89 and BI-LEVEL AUTO RACKS—All types of bi-level auto racks can also be mounted on the 89 foot deck of the new LO-DEK Flat Car. Permitting greater flexibility in the loading and tie down of autos, the LO-DEK accommodates up to 12 standard or compact autos on a bi-level rack.

LO-DEK 89 and HIGHWAY AUTO TRANSPORTERS—The LO-DEK 89 can be equipped with stanchions and other trailer accessories for hauling auto transporters or trailers up to 40 feet long. Flush mounted trailer tie-downs provide no obstacle when loading with overhead cranes or lift trucks.

U25Bs in UP Service After 20-Road Tests

When Union Pacific announced an order for 2,500-hp General Electric locomotives in July, it became the first road to purchase the high-horsepower units GE had placed on the domestic market over a year earlier (RA, May 9, 1960, p. 32). During that interval, demonstrator units operated more than 320,000 miles, hauling freight trains on 20 different Class I roads.

Incorporating what GE calls "an entirely different approach to basic locomotive design," four of the so-called U25B units went into high-speed freight service on the UP following early August delivery from the builder's locomotive and Car Equipment Department at Erie, Pa.

The U25B, the most powerful four-axle diesel-electric, is designed to meet demands for high-speed service with greater reliability and at lower operating costs. GE engineers point out that the U25B can increase locomotive horsepower up to 70% without additional units. High horsepower in one unit means that two to four U25Bs can handle the schedules of many three- to seven-unit locomotives now in service.

Power for the U25B is furnished by the GE FDL-16 diesel engine—a 4-cycle, 16-cylinder power plant that features integral head and cylinder assemblies for optimum cooling and sturdy construction. The engine drives a high-capacity, direct-connected generator which powers four GE-752 traction motors. These motors have been service-proved by millions of miles of service on thousands of diesel-electric, electric, and gas turbine-electric locomotives.

The 16-position throttle on the U25B has been well received by enginemen. The half-notch between prime throttle positions does not change engine speed, but rather increases the amount of tractive effort available by increasing generator excitation. The additional throttle stops have proved valuable in starting heavy trains on grades. The throttle system is designed to allow the U25B to operate in multiple with units having conventional 8-notch throttles.

A new adhesion-loss detection and correction system, applied for the first time on the U25B, has proved both highly efficient and extremely popular with railroads, according to GE service engineers. The system automatically corrects for wheel slip and resulting loss of adhesion by means of a light application of the locomotive air brakes. The brakes are applied only on the locomotive unit experiencing the slip.

Should the wheel slip persist for more than three seconds, a buzzer sounds and a warning light comes on. At the same time, sand is automatically applied to the rails and the locomotive tractive effort is gradually reduced. The over-all system has provided highly effective wheel-slip control with very few slip-light indications and with a corresponding reduction in the use of sand.

Railroads that have tested the U25B in actual service since it was introduced in 1960 include the Burlington; Chicago & North Western; Delaware & Hudson; Florida East Coast; Frisco; Great Northern; Gulf, Mobile & Ohio; Illinois Central; Louisville & Nashville; Milwaukee; New York Central; Norfolk & Western; Northern Pacific; Pennsylvania; Rock Island; Santa Fe; Soo Line; Southern; Southern Pacific, and Wabash.

Demonstrations of the U25B in main-line freight service were on railroads having a wide variety of profiles and included trains of varying tonnage. Runs were made under regular operating conditions, frequently with a dynamometer car to evaluate locomotive performance. GE engineers cited numerous instances where special features of the U25B resulted in outstanding performance.

Difficult Test Conditions

During demonstration runs on western railroads, the four-unit, 520-ton locomotive made several starts under difficult conditions, demonstrating its ability to pull trains out of sidings on grades. In one case, a start was made on a 1.42% grade with a 5,614-ton train of 128 cars. Start occurred in the sixth throttle notch with a maximum drawbar pull of 235,000 lb. There was no wheel creep or squeal.

In another case, a start was made on a 2.2% grade with a 3,950-ton train of 82 cars. Start occurred in throttle notch 5½ with no wheel-slip indications. A maximum drawbar pull of 235,000 lb occurred in notch 6. No manual sanding was used, and the train was brought up to 16.5 mph in 4.5 min. Automatic sanding worked properly. The dynamometer car recording showed no loss in tractive effort from momentary slips that occurred (primarily at switches) and were suppressed immediately by the automatic wheel slip brake application.

The 10,000-hp locomotive also turned in good speed performance records on ruling grades. On one run in the Southwest, the four units maintained 17 mph with a 5,617-ton train of 108 cars on a 1.42% ruling grade. With a 5,052-ton train of 118 cars, the speed on a 1.6% grade was also 17 mph. In another case, a speed of 46 mph was maintained with a 5,765-ton train of 110 cars on a 0.4% ruling grade.

The ability of the U25Bs to maintain full horsepower at high speed was demonstrated on a western run where the four-unit, 10,000-hp locomotive pulled 5,614 tons, 128 cars, on level track at a balancing at a speed of 62 mph. On a 1% grade, the locomotive maintained a minimum speed of 22 mph with the same train. On another trip, the locomotive covered 813 miles with a train varying from 3,152 to 3,207 tons at an average speed of 45.5 mph, making up a delay and bringing the train into its

U25B SPECIFICATIONS

Continuous horsepower to generator		2,500
Tractive effort at 30% adhesion, lb		75,000
Gearing	Ratio	Max. speed, mph
74:18	4.11	70
65:18	3.61	80
64:19	3.37	90
Weight in working order, lb		250,000
Length inside knuckles, ft-in.		60-2
Height, ft-in.		14-7
Width, ft-in.		10-6½
Minimum radius of curvature (locomotive alone), ft.		150
Fuel tank capacity, gal		2,900

DEMONSTRATOR UNITS operated as two-unit, three-unit, and four-unit locomotives during their test runs.

destination almost four hours ahead of schedule.

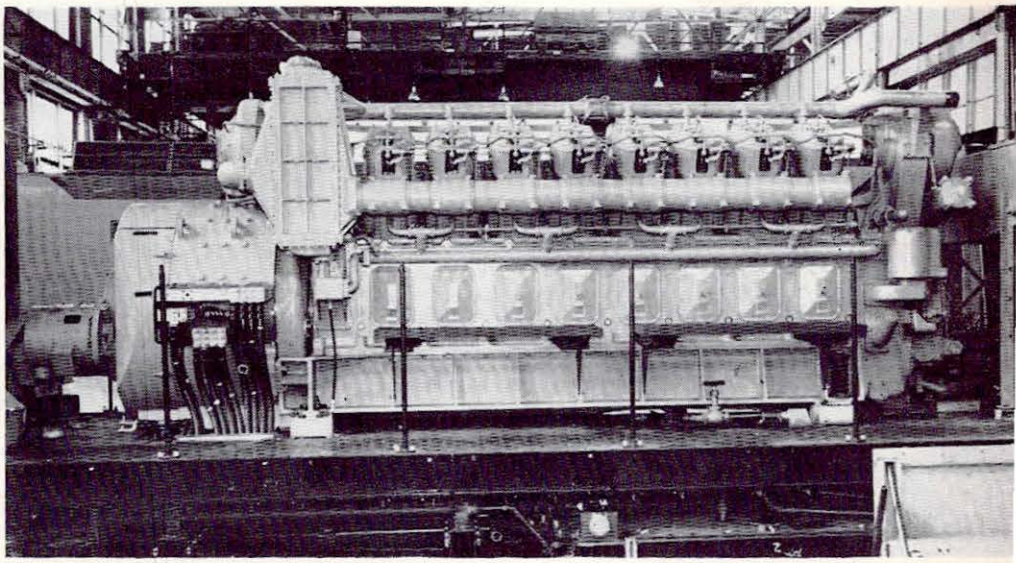
During a five-week demonstration in the Southwest, the four-unit locomotive operated 16,337 train-miles with an average train tonnage of 3,750 tons, and attained an averaged speed of 37.8 mph. This compared with a 1959 average on the same line of 2,819 tons per train and 20.6 mph average speed. The average gross ton-miles per train-hour for the demonstration amounted to 141,800, compared with a 1959 average of 57,745.

In a run on a southern road, the U25Bs maintained a speed of 18 mph on a 1.47% grade with a 4,428-ton train of 88 cars. On another run over the same road, they maintained 42 mph on a 0.53% grade with 4,068 tons—81 cars.

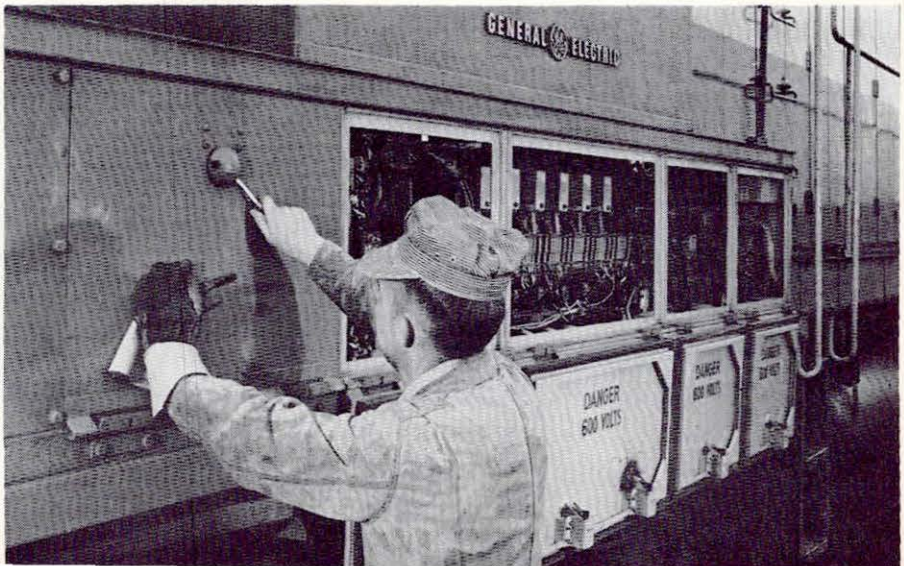
During several round trips over a 734-mile route, the locomotives demonstrated their ability to cut two hours off the scheduled time when handling average tonnage trains.

A 9-yr design and development program on the U25B produced a number of innovations. Most significant is the

(*Continued on page 54*)



TURBOCHARGED four-cycle engine is used. FDL-16 engine design is based on a prime mover used on GE locomotives for years.



PRESSURIZED CONTROL compartments on the sides of the locomotive have proved popular with electrical maintenance forces. All air for combustion and for cooling of controls passes through a special air cleaner. Electrical equipment, piping systems, and engine cooling arrangement have been simplified.

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Stated by Mr. Harold M. Hoffmeister of the Missouri Pacific RR at the 3rd National Railroad Apprenticeship Conference at Omaha in October 1959.

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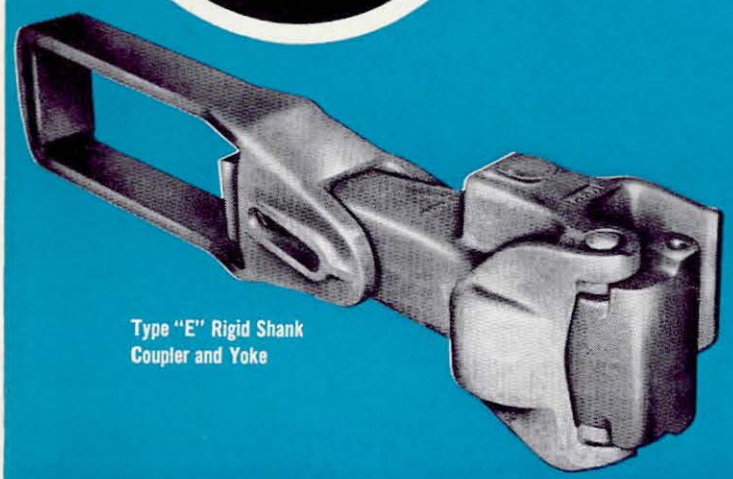
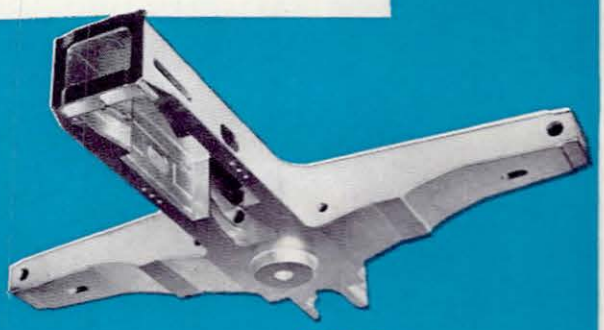


Type "E" Rigid Shank
Coupler and Yoke



One Piece
Underframe End

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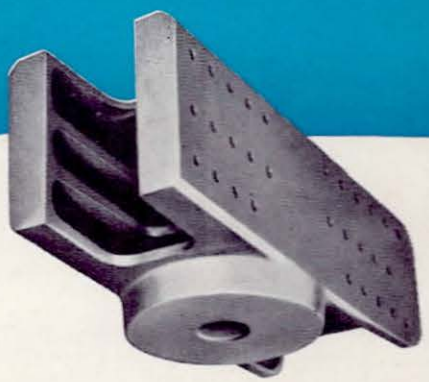
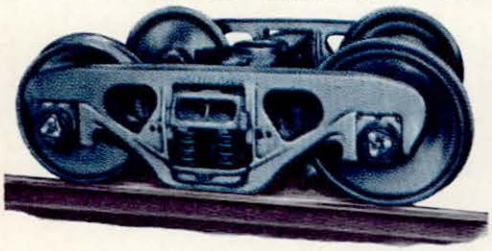
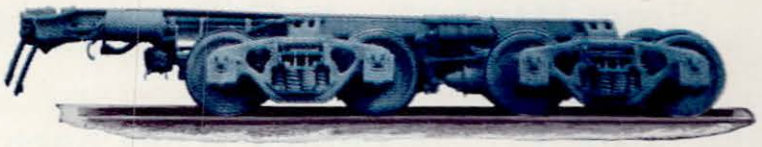


Bolster Center Filler with
Integral Center Plate

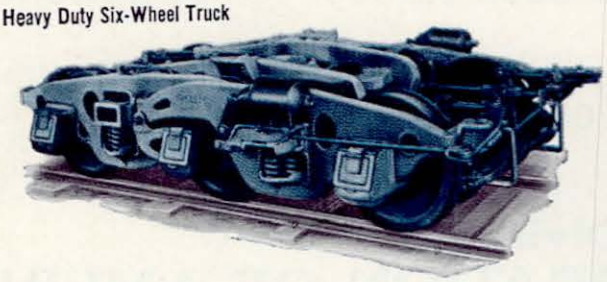


C-R (Cushion-Ride) Truck
with Roller Bearings



Heavy Duty Eight-Wheel Truck

Heavy Duty Six-Wheel Truck



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Modified Tamper Works Fast

► The Story at a Glance: Engineers of the Portland Terminal Company felt there was a need for a tie-tamping machine specially designed for surfacing track through leads and along ladders in terminals. Here is the story of how such a machine was developed and how it has performed in surfacing more than 100 turnouts, as well as a considerable amount of sidetrack, since last May.

The pilot model of a tie-tamping unit designed especially for yard work has been in use by the Portland (Me.) Terminal Company since May of this year.

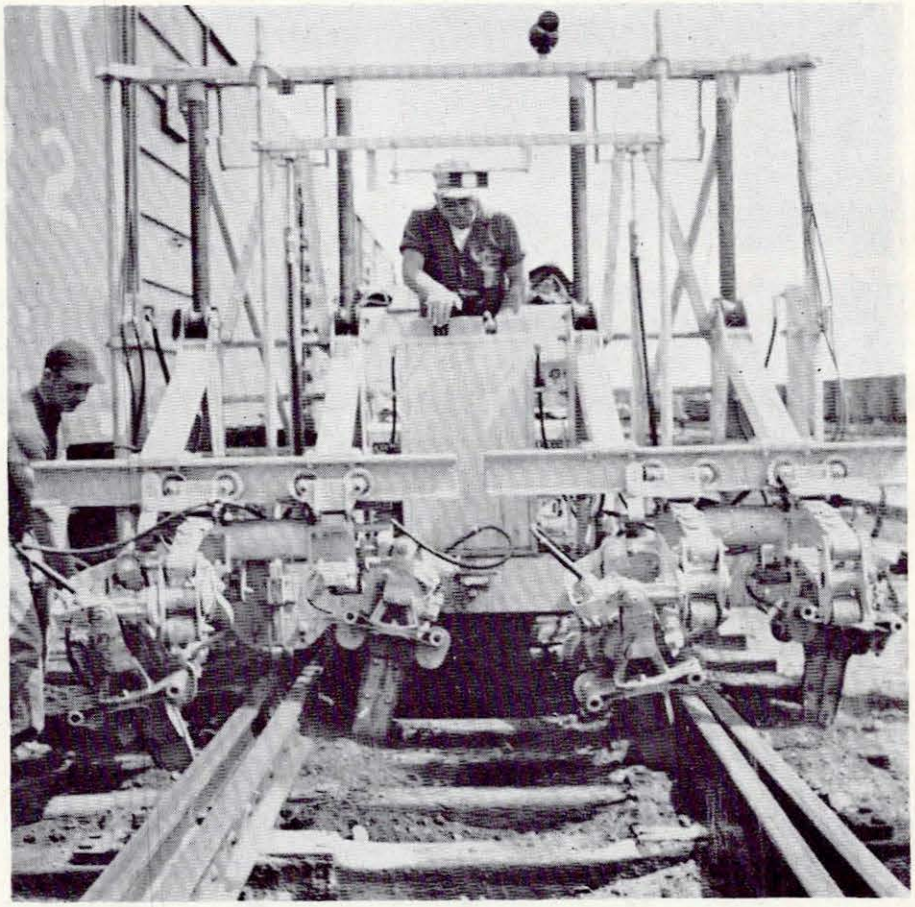
Through the third week in August the road had surfaced about 107 turnouts with the machine, as well as a considerable amount of side-track. As a result of this experience, says J. W. Wiggins, PTC chief engineer, "we have found that in tamping leads we are able to tamp all of the switch timbers in the lead from the head blocks to the heel of the frog."

He adds that there are three or four ties interlaced behind the heel of the frog, which cannot be tamped, but points out "there would not be any way of tamping these ties except from the ends with a hand bar."

Interest in a tamping machine designed specially for yard work first developed on the Portland Terminal last year, according to Mr. Wiggins. It was concluded that a machine that would do "a proper kind of job through leads and along ladders" was necessary for use in such locations as the road's Rigby yard. This need was brought to the attention of Jackson Vibrators, Inc., with the result that a pilot model of the type of machine desired was developed during the winter of 1960-61. It is this model that has been in PTC service since last May.

The "yard tamper" is a modified version of the Jackson Jack-Spot tamper. The latter machine has two independent workheads, each of which carries two tamping units in cross-tamping position (diagonally across the rail and tie). The tamping blades are of the double-blade type. For jacking the track, the Jack-Spot has two hydraulic rams, one outside the rails on each side.

To adapt the Jack-Spot tamper for yard work, major revisions were made in the workheads. Each pair of tampers was mounted together on an auxiliary workhead which, in turn, was hung by means of rollers from a transverse beam forming part of an independent crosshead. By means of an hydraulic ram, each workhead may be moved back and forth laterally on its supporting beam to place the tamping tools in the desired position for tamping at the particular location.



WORKHEADS of modified tamper are hung from crosshead by rollers and are moved back and forth laterally by hydraulic rams for placement as required by conditions. Need for a machine that could do a good tamping job through leads and along ladders led to development of the modified tamper.

Another change was to replace the double tamping tools with single blades. The latter are 26 in. long and have ¾-in. working edges. The mounting for the blades is such that as each blade penetrates into the ballast the angle of slant becomes progressively greater. According to the manufacturer, this feature, plus the unusual length of the blades, permits a thorough job of tamping under large frogs.

Commenting on this feature of the tamper, Mr. Wiggins explained the railroad had concluded that "the tamping of the ties with staggered spuds is effective in forming a compaction under the ties from 18 in. inside the rail out to the end of the tie."

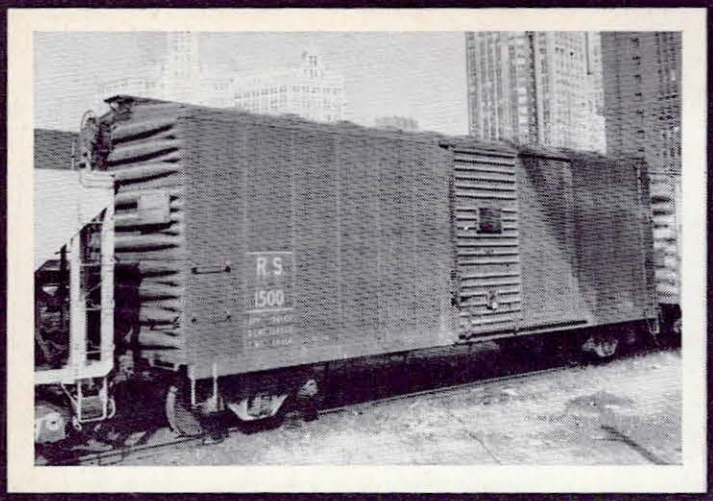
To make it possible to use the single tamping blades, it was necessary to remove from the motor base the regular adapter plate as used with the double blades and to replace it with a different one for the single blade. However, when it is desired to use the machine for other types of work, such as spot tamping or jack tamping, it is said to be a simple task to replace the standard adapter plate and attach two of the regular tamping bars.

In modifying the Jack-Spot tamper for yard work another change was to replace the existing tamper motors with the more powerful motor that is used on the Jackson Track Maintainer.

On the Portland Terminal the forces used with the Yard Tamper, explained Mr. Wiggins, consist of a foreman, one machine operator and usually three trackmen, depending on the need for shoveling ballast in to feed the tamper and trimming behind it.

"This piece of equipment," he said, "meets a need in our yard maintenance work which increases our production effort in surfacing leads by at least 100%, with half as many men." When

(Continued on page 36)



In 1949—The First Aluminum Boxcar. The first aluminum boxcar, with all-aluminum body and centre sill of riveted construction, was produced in 1949. This car has a light weight of 34,000 lbs., 12,000 lbs. less than standard steel cars. No maintenance has been required in continued service.

In 1955—The First Welded Aluminum Open Hopper Car. This car has a light weight of 36,600 lbs. and a capacity of 173,400 lbs. In addition to being the first welded aluminum open hopper car, it was the first time machine-welded aluminum construction was adopted in car shops.

In 1956—A.A.R.-Type Welded Aluminum Centre Sill Proved. Impact testing proved that this sill exceeds published A.A.R. design requirements. Tests were conducted on a 50-ton aluminum-covered hopper car built in 1956 with a light weight of only 32,500 lbs. . . . capacity 8½ tons more than similar steel cars.

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TANK-HOPPER CAR!

and refrigerator car roofs, the inside framework and lining of refrigerator cars, brine tanks, hopper cars, gondola cars, hatch covers, piggyback trailer apron plates, and passenger cars. Cost records prove that Alcan aluminum can save money in the long run.

The light weight of aluminum means that fewer cars are required to transport a given cargo or that more cargo can be handled by the same car. Aluminum's excellent resistance to weather and corrosive cargoes means that annual maintenance costs can be lowered appreciably.

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MODIFIED TAMPER WORKS FAST

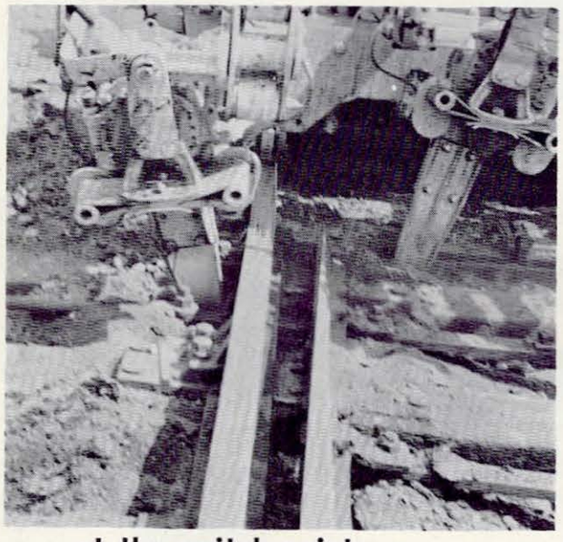
(*Continued from page 33*)

doing this kind of work and if the track is available the experience has been, said Mr. Wiggins, that "we can surface from three to four complete leads in six to eight hours."

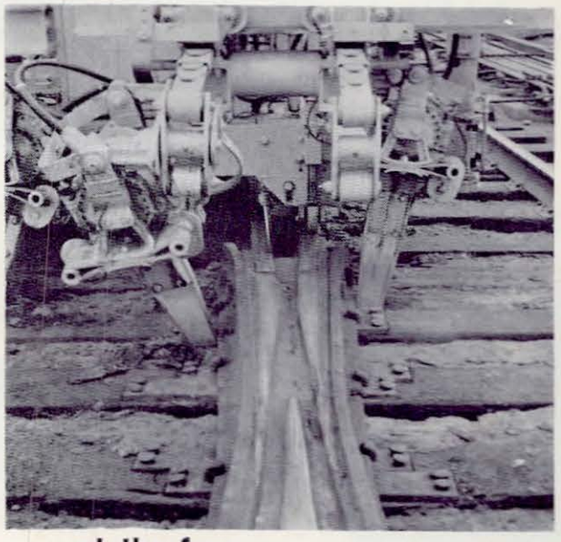
"It is not economical," he adds, "to use this equipment in open track if considerable work is to be done of that nature. The reason it is not economical is because each head has to be positioned twice in order to get the proper compaction, hence, using it in this manner requires twice the length of tamping time that is required by the use of a conventional Jackson Maintainer.

At the time the subject of a yard tamper was proposed, the Jack-Spot tamper was the only machine in the Jackson Vibrators line that could be modified for this purpose .Since then, the company has put its two Utility Tampers on the market. Of these, the Model 260, which is powered with a diesel engine and has the more powerful vibratory tamping units, has been selected for modification into the Yard Tamper. As far as the inclusion of jacks is concerned, this will depend largely on the needs of the customer.

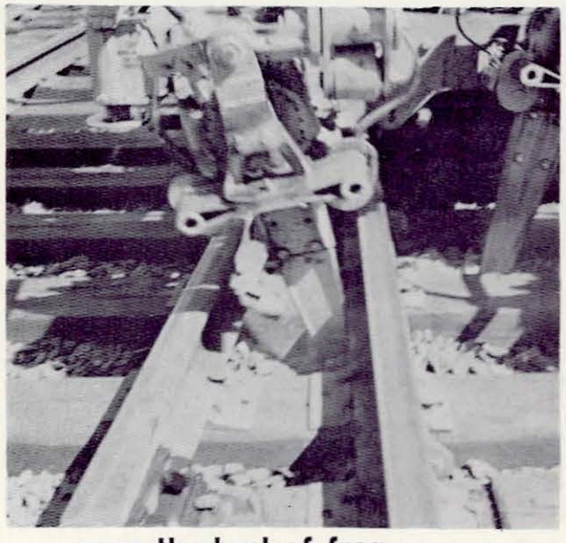
How the modified machine tamps a turnout . . .



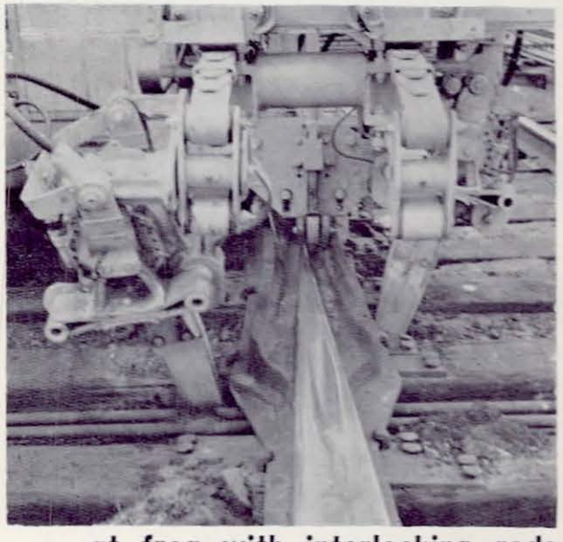
. . . at the switch points . . .



. . . at the frog . . .



. . . near the heel of frog . . .



. . . at frog with interlocking rods

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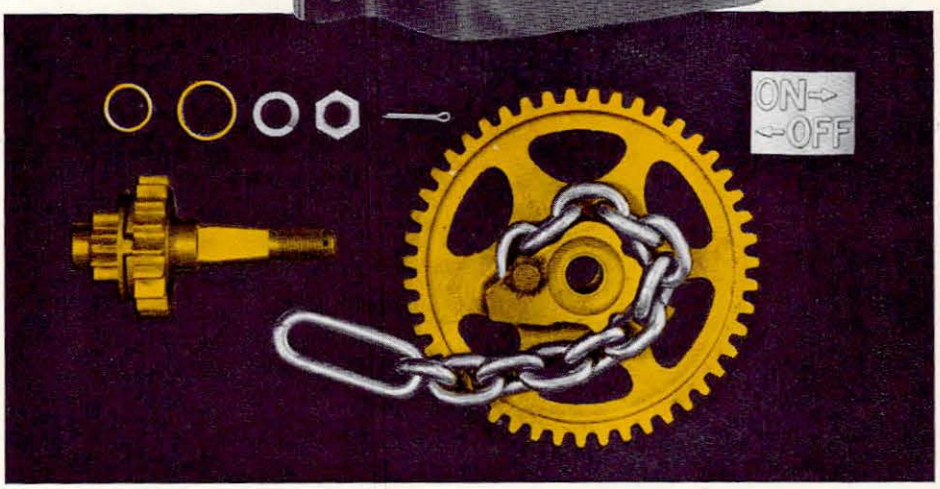

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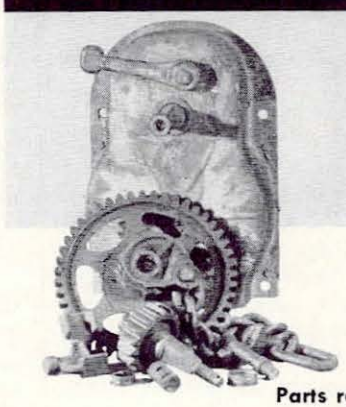

Parts removed to show condition.

AJAX CONSOLIDATED COMPANY

Division of Southern Electric, Inc. 8701 S. Greenwood Avenue, Chicago 19, Illinois

Educating Rate-Making Officers

By Dr. ELIEZER KRUMBEIN
Assistant Director of Education
Transportation Center
Northwestern University

One area in which an increase in adequately informed people should favorably influence railroad profits is that of up-to-date cost-finding and rate-making techniques. While some of the higher executives on practically every railroad keep up with the latest developments in cost-finding and rate-making—the rate of progress in this field is so rapid that many men of the second and third tiers of railroad management are not fully aware of the latest discoveries in this field. Hence they often lack the basic skills necessary to enable them to compete as effectively as they might, especially with private carriage with its growing 81,000 company-owned fleets in interstate commerce.

For example, it would not be surprising if railroad junior executives believe they ought to make every effort to hold on to *all* their low-rate bulk commodity or *all* high-rate, manufactured commodity freight, despite the fact that some of this business may be uneconomic for the rails to carry, and has no future.

Some bulk commodities, on some hauls, are carried at rates below railroad out-of-pocket costs—e. g., corn, straw, beets, goats, gravel and sand, logs, etc. Interstate shipments of animal products and forest products are often carried by railroads at a loss. In addition, many branch-line operations, short-haul and small shipments, are carried at less than long-run marginal cost. Do all junior executives know just what freight business is profitable and what is not?

High-Value Goods

On the other hand, some high-value, manufactured products produce excellent profits for some of the railroads (for that part of the tonnage still moving by rail), but some of such business is self-defeating. It may sound paradoxical to criticize rates that are highly profitable, but such rates encourage and enable trucking companies to compete, while lower rates (less profit per ton hauled) might conceivably add to railroad tonnage by greatly increasing the volume moved by rail. This is true particularly of long-haul, in which trucking companies have out-of-pocket costs at least two and three times the rail costs.

Truck costs are advantageous mainly for short-haul—yet the umbrella of high long-haul rail rates on some manufactured products permits the trucks to take a healthy part of this business away from the rails because the trucks give door-to-door and more convenient service at the same price. But if this is so, why don't the rails quote rates for these high value goods more in line with the lower rail costs?

It is ironic but true that a good deal of long-haul truck business exists only because railroads maintain some rates high enough to permit trucks to compete. Railroad top managements are aware of this, and have won cases before the Interstate Commerce Commission, permitting them to bring rates closer in line with costs, thereby bringing real competition to the truckers and to private carriage. But how many junior railroad traffic executives are fully aware of this competitive advantage, and are making constant use of it in their rate work?

Ship in Carload Lots

To obtain the lowest rail costs and rates it is necessary to ship in carload lots (say 40,000 lb), whereas, to obtain the lowest truck costs and rates, it is necessary to ship only in truckload lots (say half as much, or 20,000 lb). Truck speed is, on the average, faster than that of a freight train, and trucks give door-to-door service. Nonetheless, taking all this into account and making adjustment for capital tied up in inventory on slower transport, economists find that total rail costs for shipments more than 100 miles are often far below truck costs. For 400 miles (for example), total rail costs have been found to be 1.78¢ per ton mile, while comparable truck costs are 3.85¢ per ton mile.

Trucks have a clear cost advantage for traffic of less than 100 miles, the rails a narrow cost advantage at 100 miles, and a clear and increasing cost advantage for traffic moving over 200 miles.

Yet, despite this situation, 87% of the nation's common carrier truck ton miles occurs in the over-100-mile zone, according to the Interstate Commerce Commission. For most of this traffic, railroads have a real and demonstrable cost advantage, yet traffic departments often do not take full advantage of it.

A good part of the reason for this situation may be that many younger railway officers have not been trained to think in terms of costs—particularly the relationship between rail and truck costs and the applicability of such information to successful competitive practices. This situation may persist even though some top officers are fully informed in this area—but lack the time and opportunity to train subordinates to think in such terms. As a result, rate-making decisions by second and third tier officers may often not take full advantage of all possible competitive opportunities. It certainly should greatly improve railroads' competitive performance if all their key people were familiar with all pertinent information on this subject.

Another result of railroad rates which are less keenly competitive than they could be is to encourage shippers (charged these high rates either by railroads or trucking) to shift to private or contract trucking (or illegal trucking) just to escape what are considered to be unnecessarily high costs.

Rail rates on carload lots can often be more competitive with truck rates than they are now, wherever relative costs justify such competition—and costs would appear to justify greater rate competition in a wide range of cases, particularly beyond the 100-mile area. But such action may call for the thinking of a lot more people in our rail traffic departments, particularly among the up-and-coming junior executives who will be the top men of tomorrow.

Less-Than-Carload Piggyback

Some railroad traffic departments are preparing to offer piggyback service for less-than-carload traffic. Most transportation experts agree that substantial change is needed in the present rail and truck tariffs for less-than-truckload and the very smallest less-than-carload movements if this business is to be placed on a self-sustaining basis. The rates on many of these small shipments, particularly those under 10,000 lb in size and moving short distances, must be boosted if costs are to be met from revenues. This helps explain why *only one-sixth* of railroads using piggyback believe such service to be more profitable than other traffic.

For the most part, small-lot business can be more efficiently carried by a simple truck operation than by rail or piggyback. But when the length of haul is quite long, the story changes. Present

(*Continued on page 40*)

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rate structures for the small-lot shipments, however, are so economically weird that not even trucks can make money hauling most of this business. The result has been that trucks have avoided small-lot shipments whenever they could. The least desirable of the small-lot business has therefore been left to the railroads, frequently through the freight forwarder.

The growth and profitability of rail piggyback—after its initial acceptance by shippers as an economical and efficient method of transportation—will also depend on sound cost-finding and rate-setting procedures. If these latter procedures are in keeping with the latest research, and junior executives are trained in using such information in competitive decisions, we will surely see a widespread use of rail piggyback—wider than today when piggyback accounts for only 2% of the nation's rail carloadings. But this requires expanded training of subordinates which top management doesn't have time to give.

Piggyback Costs

A good number of railroads are still hesitant about piggyback—only 58 of the 106 major railroads provide any piggyback service at all, mainly because they are unsure about cost. What are the facts in this area?

Simply summarized, careful research indicates that the basic difference between truck and rail piggyback is the differential in line-haul expenses (after leaving the terminal). For example, using 1955 figures, truck line-haul expenses for (say) a 10,000-lb load per trailer is 5.4¢ per revenue ton mile. For rail piggyback transport, the same load costs 1.4¢ per revenue ton mile.

Using data from the ICC, the Association of American Railroads, and the American Middlewest Common Carriers, it appears that piggyback line-haul expenses with the newest type flatcar are about one-third of truck line-haul expenses. Obviously, the truck line-haul cost is still great. For 30,000 lb, for example, the highway truck cost is 1.82¢ per revenue ton mile, as against 0.6¢ for piggyback. For long-haul traffic, a sizable difference results for all load sizes. Terminal expenses, incidentally, are believed to be identical for less-than-truckload piggyback and truck movement.

The same situation generally prevails on *carload* line-haul expenses, according to current research. Truck line-haul expenses are found to be substantially greater than boxcar line-haul costs. In shipments in excess of 40,000 lb, the cost for truck is from 2½ to 4 times as much as boxcar.

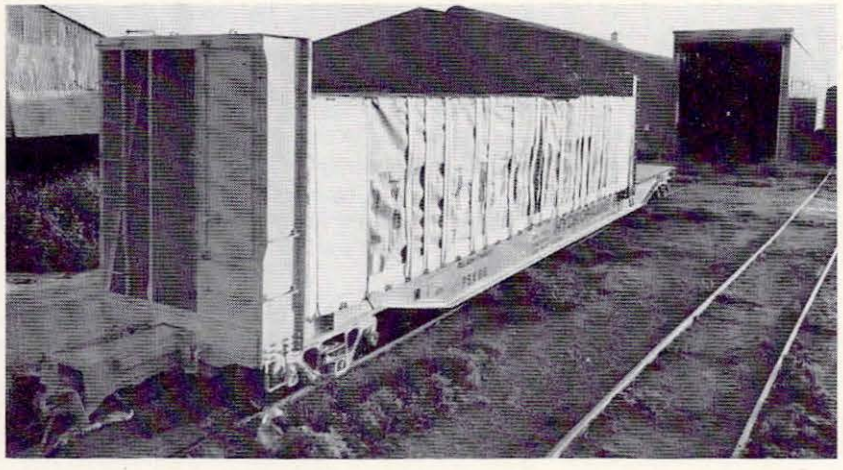
In terms of line-haul costs, it would seem to be cheaper to transport loads in excess of 40,000 lb in boxcars—but for loads of less than this, it would be cheaper to use piggyback. However, as between boxcars and piggyback, there may be a difference in terminal expenses—depending on whether the delivery is close to the railroad yards (and private siding), or the delivery is far from the yards. In the former case, it would be cheaper to use private siding unloading; in the latter case piggyback transport would be cheaper.

This seems obvious enough, and railroad managements are aware of it, but their distribution colleagues in shipper companies do not seem to know it. Two knowledgeable investigators (one academic, and the other railroad), after examining what private industry does in the way of private siding unloading, conclude dismally, " . . . it seems safe to conclude that a large amount of uneconomic rail siding is now [in 1960] in use."

Traffic Growth Opportunity

If this is so, then rail traffic representatives have a golden opportunity to point this out to customers. If industrial conditions in a city change so that private siding unloading is too expensive, the railroads should be able to sell more piggyback. After all, piggyback combines the best that rails and trucks have to offer—the rails' low-cost line haul cost plus the trucks' flexibility. Cutting a customer's costs may result in increasing a railroad's business—instead of waiting for a trucking company to come forth with the suggestion. But if rail junior executives are not aware of the economic facts, they cannot use them to their competitive advantage.

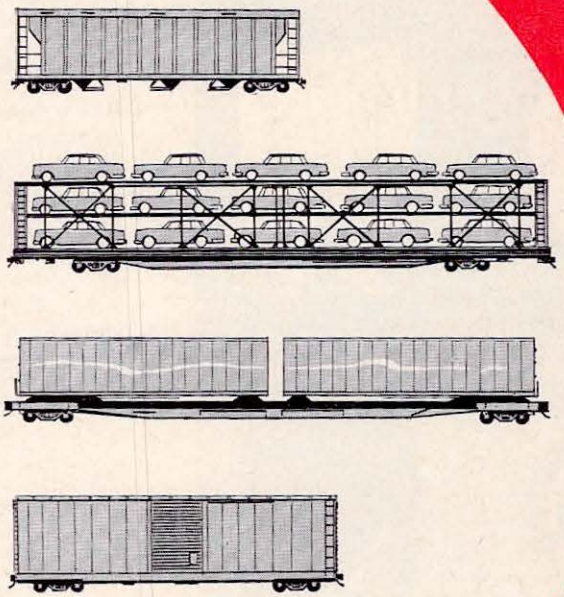
These are some of the considerations which have led the Transportation Center at Northwestern University in Evanston, Illinois, to plan a two-week seminar (October 29 to November 10, 1961) on transportation pricing policy—viz., how to utilize the newest cost-finding and rate-making techniques to further the interests of each transportation mode, and still provide shippers with the most expeditious service at the lowest cost. The seminar is programmed with the purpose of widening the extent of current cost and pricing knowledge, among the transportation officers to whom it should prove helpful.



Hydroframe-60 Car Withstands Impacts

An experimental flat car, equipped with Pullman-Standard's Hydroframe-60 cushioned underframe, has completed its first test shipment of gypsum wallboard, making the 860-mile trip from a Celotex Corp. plant in Hamlin, Tex., to a consignee in New Orleans, La., without a trace of damage to the 123,508-lb load despite in-transit impacts up to 10-mph recorded on the car's sliding center sill. Ten-foot-high bulkheads are adjustable to either a 48-ft 6-in. length for regular loads or a 64-ft 8-in. length for heavier loads. P-S believes the Hydroframe-60 principle, already applied to standard box cars, container cars and auto racks, will reduce the railroads' annual $120-million lading damage bill.

demonstrated performance... now making operational savings on thousands of heavy-duty high-mileage cars



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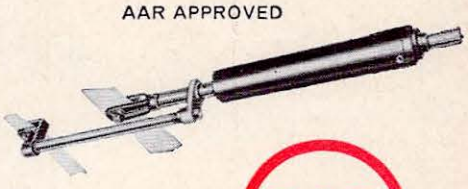

The proven performance of SAB Brake Slack Regulators makes for correct, automatic brake adjustments on these heavy-duty, high-mileage cars. SAB Brake Slack Regulators provide the much desired safety and dependable brake service that eliminates terminal delays and cuts maintenance costs to a minimum. Their excellent performance and durability record is evidenced by the continually growing number on cars of American railroads.

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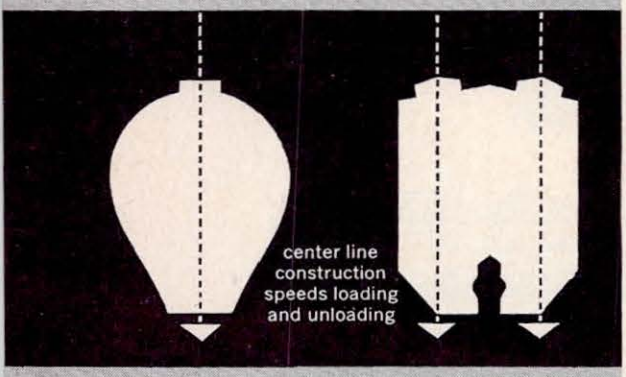
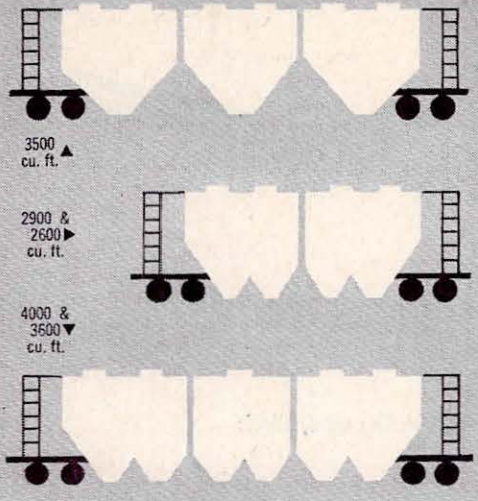


center line construction speeds loading and unloading

all hang-up points and obstructions eliminated, including center sill

carries a variety of ladings without contamination



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modular construction permits Center Flow to be manufactured in different capacities.

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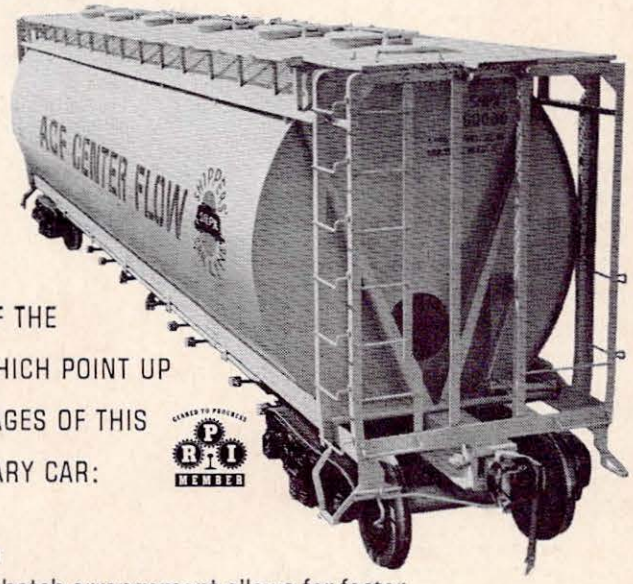
ACF's new Center Flow can carry a wide variety of ladings, including plastic pellets, chemicals and foods such as flour, malt and other grains. Its clean interior, free from sharp angles and ledges, speeds loading and also facilitates quick discharge with either gravity or pneumatic outlet. The Center Flow's design versatility enables it to be manufactured in different capacities to provide the most economical transport of commodities of varying density. A further design advantage lies in the fact that the number of unloading hookups can be tailored to meet individual requirements.



FOLLOWING ARE SOME OF THE FEATURES WHICH POINT UP THE ADVANTAGES OF THIS REVOLUTIONARY CAR:

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- Center line hatch arrangement allows for faster, easier loading.
- Light weight increases payload.
- More effective use of cubage.

UNLOADING

- Center line unloading.
- 50° slope angle allows faster unloading.
- Either pneumatic or gravity outlet.
- Single or double outlet per compartment as desired.

CONSTRUCTION

- Manufactured in aluminum or steel.
- Fewer hatches.
- Elimination of center sill.
- Elimination of side stakes, and carlines.
- Lower center of gravity.

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- Ease in lining preparation.
- "Clean Bore" design—self cleaning.
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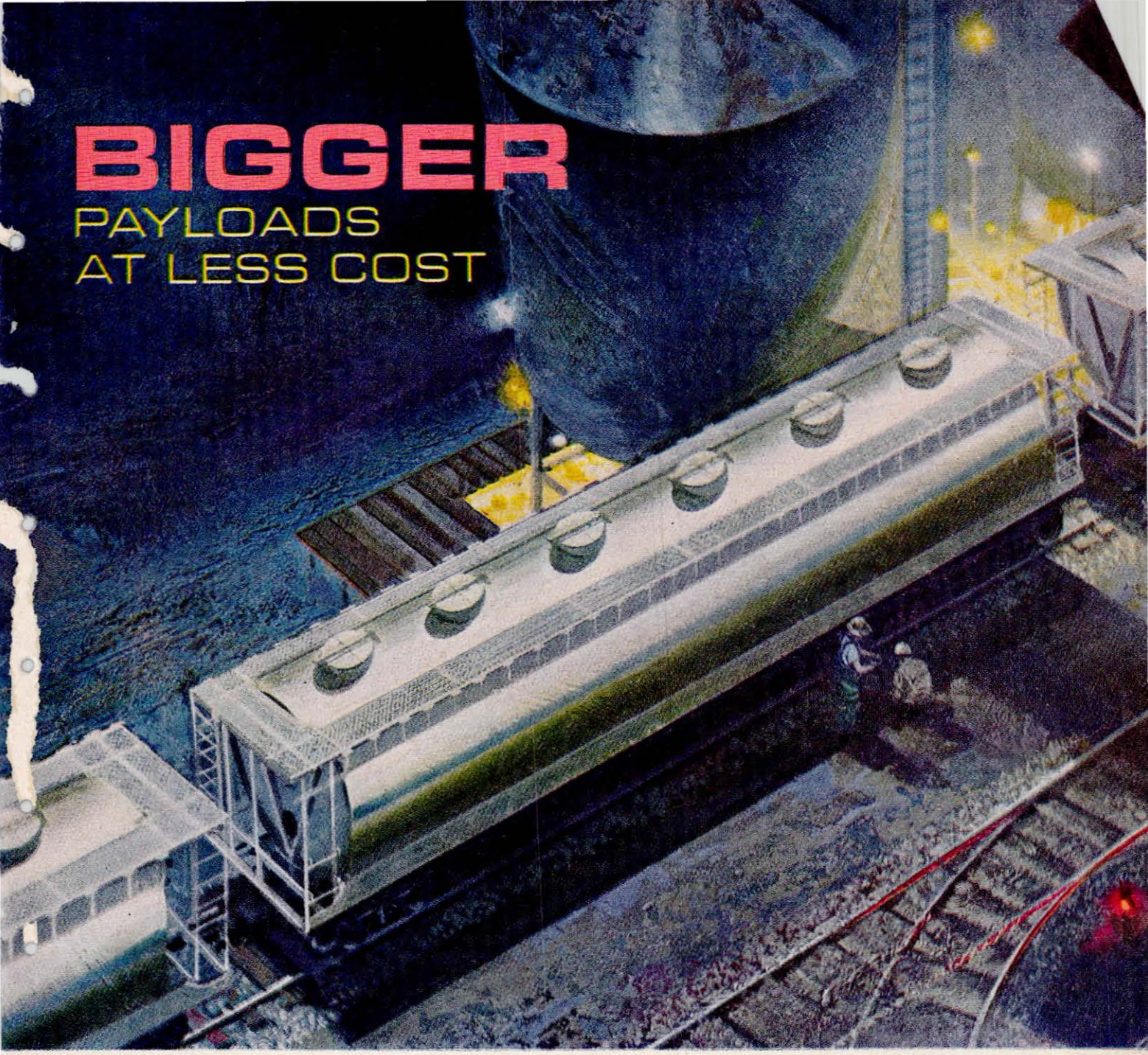
- Individual compartments.
- Gasketed hatches with screw-down covers when required.



The revolutionary new Center Flow is the most advanced covered hopper car ever built. Manufactured in either aluminum or steel, its large capacity enables it to carry bigger payloads than any covered hopper now on the rails, while its clean bore design and center line construction assure quick, clean and easy loading and unloading of dry bulk commodities.

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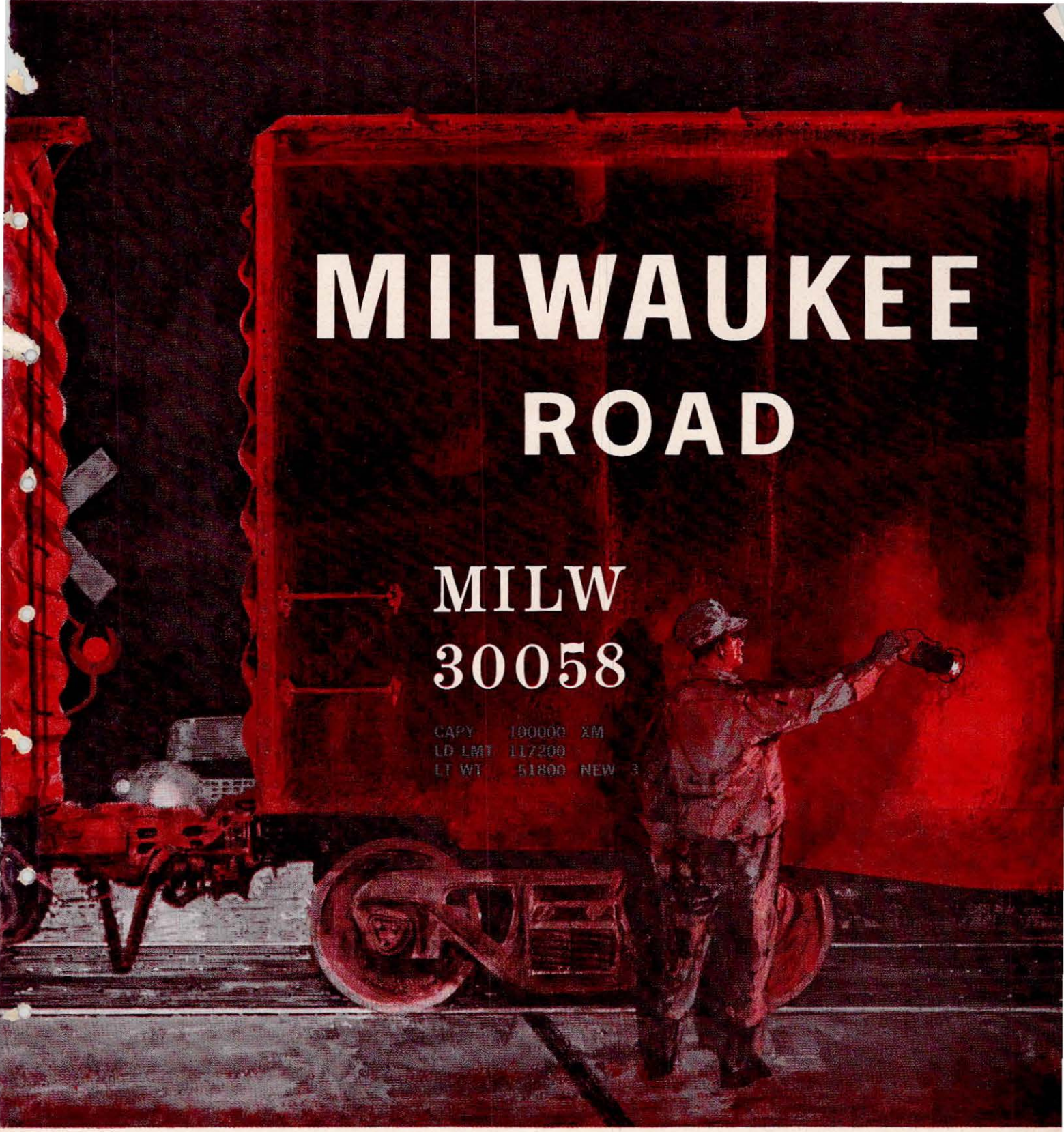

Looks like stencil paint by day. But after dark the difference is dramatic. Because "Codit" Reflective Liquid gives your car markings the power to reflect light over 50 times brighter than paint. It literally puts your road's name in big, bright lights—a most impressive way to advertise at every crossing. Reporting numbers also become boldly visible in any light beam. And "Codit" Liquid makes your markings double as a safety measure, alerting motorists night after night after night.

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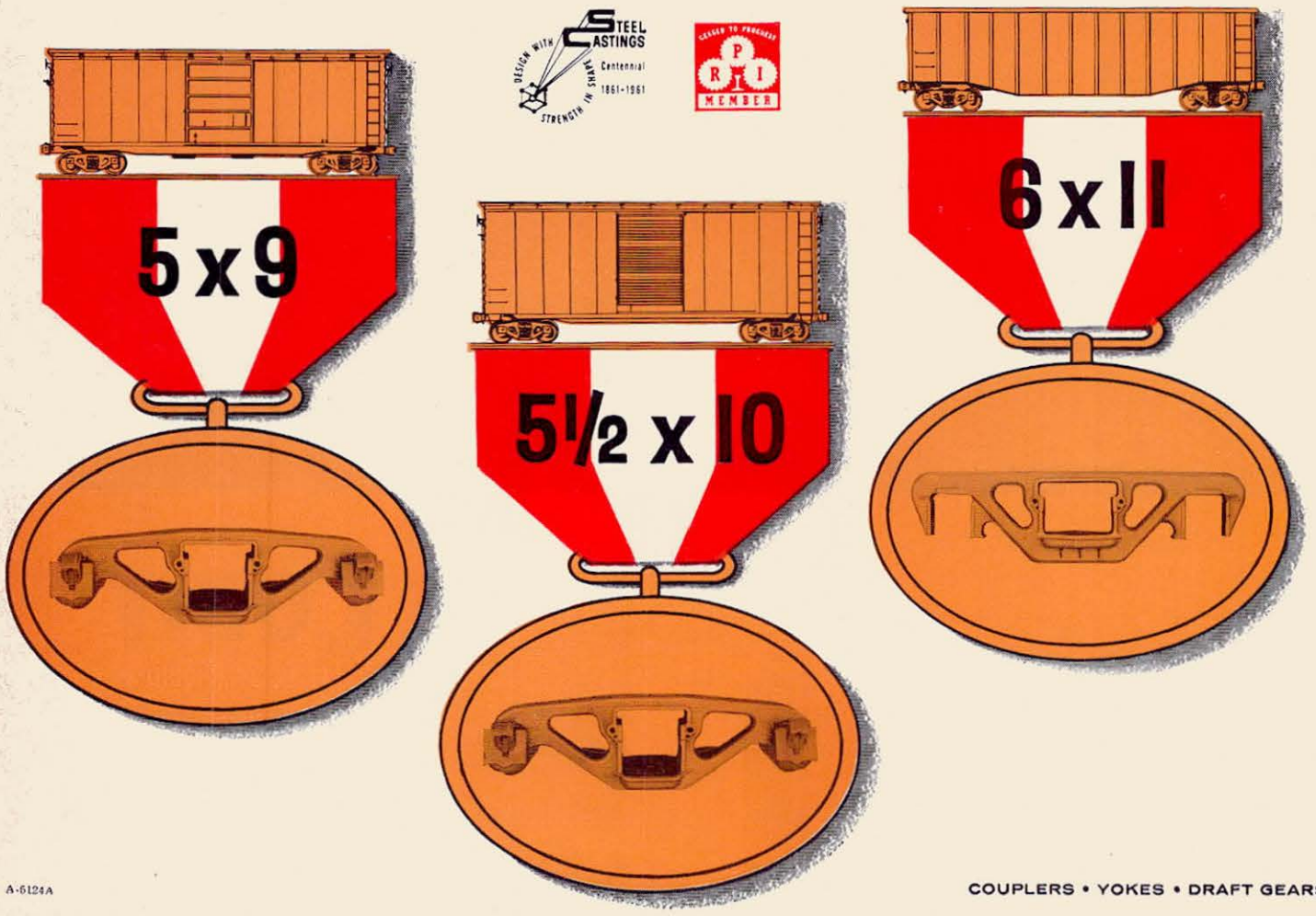
Now no matter what criteria you use in evaluating freight car trucks — *the National C-1 Truck's got it: ride . . . strength . . . proven maintenance economy of less than 5 pennies per C-1 Truck over a 12-year service period.*



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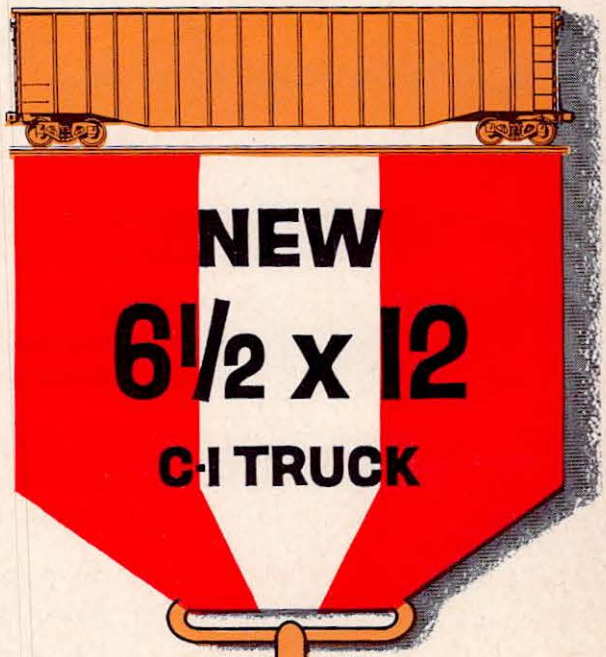
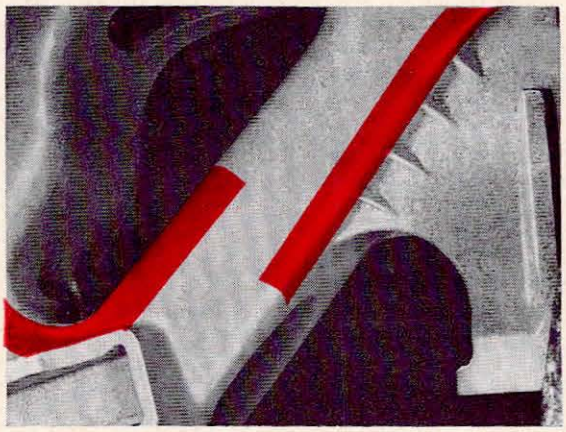
reasons for specifying

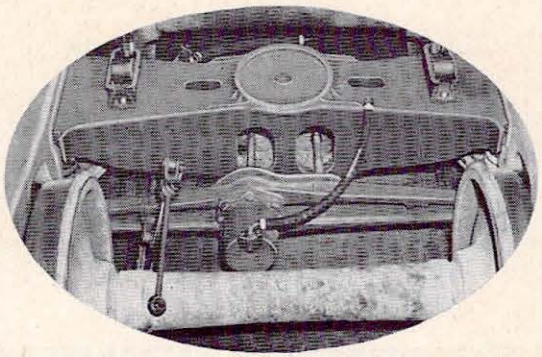
C-I TRUCKS

STRENGTH





*The new design tension member is a combination of inverted "U" section at the lower part and conventional "U" at the upper part. It reduces stresses up to 28% in lower part and up to 20% in upper part over conventional "U" sections of same size. In addition to considerable stress reductions a more even stress distribution throughout the whole frame is obtained with this new design feature.



If specified at time of order, optional 6 x 11 and 6½ x 12 truck bolsters can be supplied to accommodate the Wabcopac Brake Assembly.

Transportation Products Division

International Division
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National Castings Company of Canada, Ltd.
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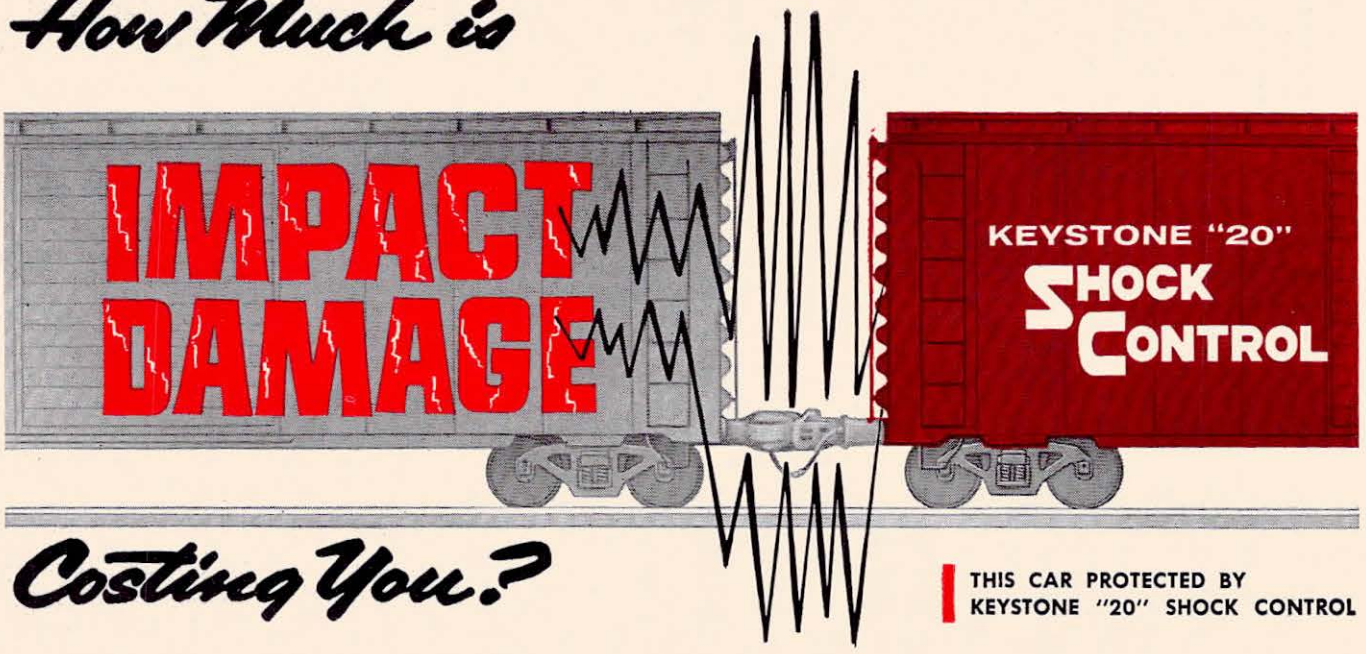
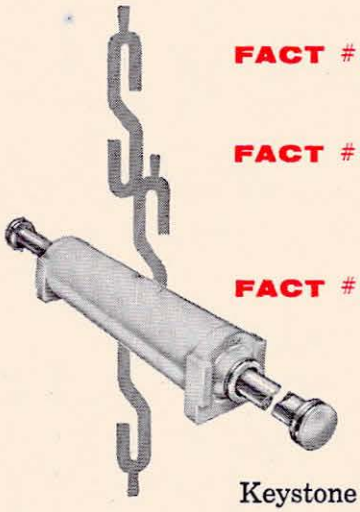
How Much is IMPACT DAMAGE Costing You?



THIS CAR PROTECTED BY
KEYSTONE "20" SHOCK CONTROL

Eventually every dollar paid for loss and damage claims to lading or cars, resulting from impact damage, comes right out of your net profit.



FACT #1: **The average box car will cost you $4,000 in damage claims during its normal operating life.**

FACT #2: **An undetermined, but substantial, amount of repair work and loss of customer confidence and good will further reduces your profits.**

FACT #3: **For approximately $90.00 a year, during the twenty-five year life span of the average car, you can equip the car with the Keystone "20" SHOCK CONTROL and reduce loss and damage claims up to 80%.**

Keystone "20" SHOCK CONTROL is an integrated system designed to give maximum cushioning to a car body. It provides safer, more effective protection for cars and cargoes. Readily installed in any new freight car, the Keystone "20" SHOCK CONTROL prevents any direct transmission of impact energy from the center sill to the car body.

When you're adding up costs and looking for savings, investigate the Keystone "20" SHOCK CONTROL. Your initial investment will not only return savings from reduced loss and damage claims but also a bonus of customer confidence and good will.

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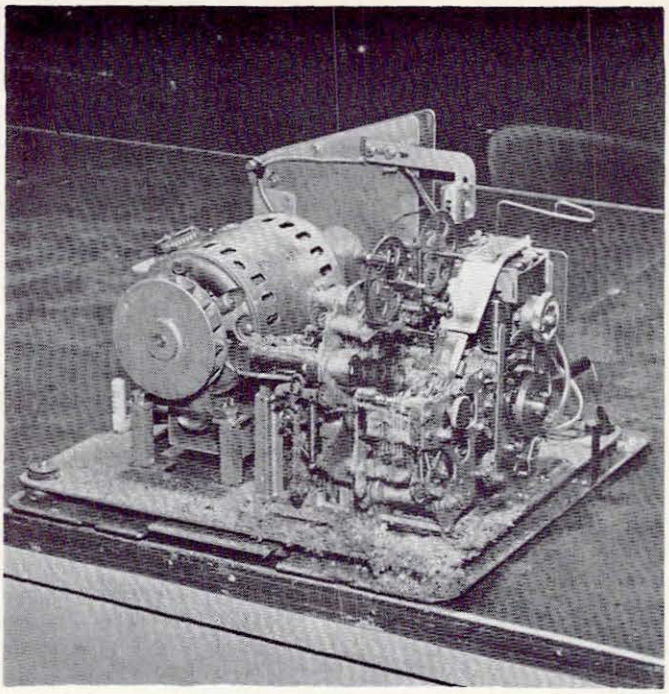
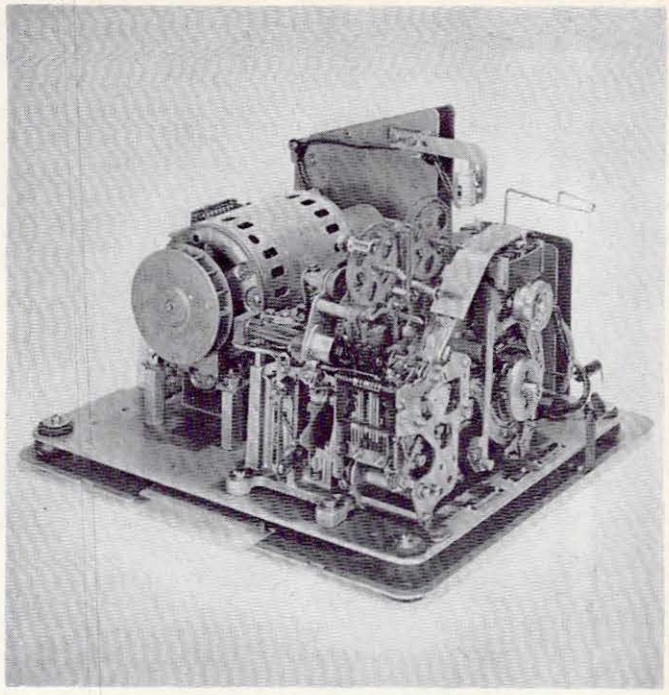




BEFORE AND AFTER views of a teletypwriter mechanism cleaned with the aid of ultrasonic energy.

Ultrasonics Speeds Cleaning

What once was a two-days' job of cleaning teletypewriters can now be accomplished in about two hours. The Louisville & Nashville does this by using high-frequency sound waves to loosen dirt and grime from its printing telegraph machines.

After removing the teletypewriter mechanism from its case, the mechanism (minus the hard-rubber platen) is immersed in a tank of liquid, usually a solvent and detergent. Inside the tank, transducer units expand and contract, sending high-frequency sound waves out through the liquid. The ultrasonic waves vibrate at 20,000 to 40,000 cycles per second. When the ultrasonic cleaner is operating, the sound waves cause rapid formation and collapse of countless microscopic bubbles. Although not visible to the human eye, the collapse of the bubbles creates a scrubbing action that pulls dirt, grease and oil from the mechanism being cleaned. The liquid solvent dissolves the grease and soluble oil, while dirt torn free is held in suspension by a detergent.

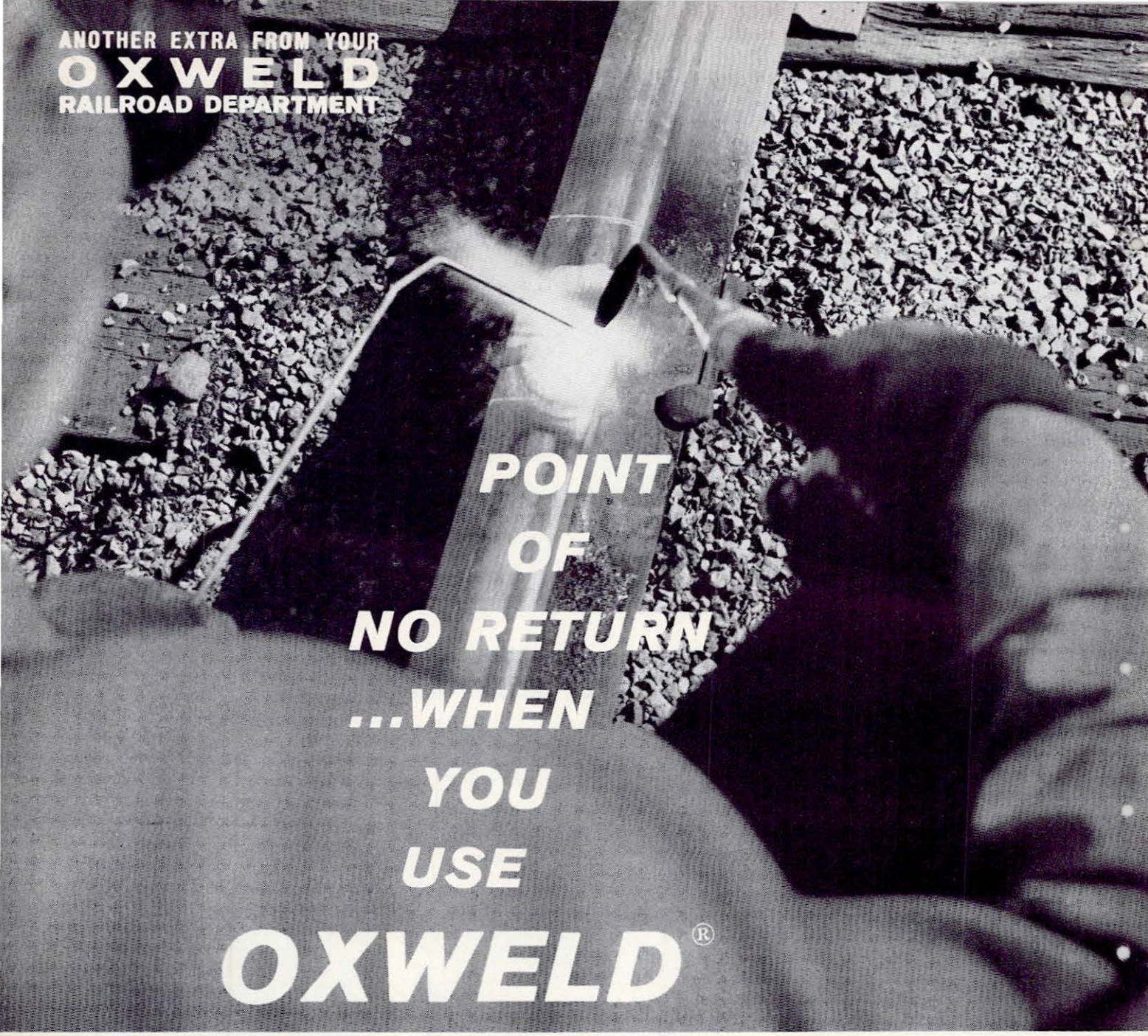
After several minutes' immersion in the ultrasonic cleaning tank, the teleprinter mechanism is taken out, drained, dried, oiled, put back into its case and inspected, ready for service.

P. P. Ash, L&N's superintendent communications and signals, reports that all the road's teletypewriters are now being ultrasonically cleaned. He says the new method has kept the machines running with a minimum of lost time for cleaning.

The Curtiss-Wright ultrasonic cleaner installed by the L&N communications and signal department consists of a generator and cleaning tank with transducers. The generator converts 60-cycle AC into the 20-40,000 cycle current, which is fed to the transducers that expand and contract to produce ultrasonic vibrations.

ULTRASONIC generator produces electric energy at 20,000 to 40,000 cycles per second. A transducer in the cleaning tank converts the electric energy to the mechanical vibrations that enhance solvent's cleaning power.

CLEANER can handle a variety of small parts, and can be useful in other railroad departments (such as mechanical). In this case, the scrubbing action of "captivation" (rapid formation and bursting of bubbles) eliminates need to completely disassemble and clean parts separately.



YOU WON'T have to go back—when you repair engine burns or battered rail ends with OXWELD rods and welding apparatus.

OXWELD apparatus is probably in use right now on your trackage. If you talk to the men who work with it day-in and day-out, they'll tell you the OXWELD brand stands for reliability. Basic reason: at LINDE, railroad equipment is handled by railroad specialists.

You can get everything for railroad welding—from goggles to torches—under the OXWELD brand. No off-quality lines, no second-line parts. Everything has been engineered to the most modern and exacting standards. In fact, many of them have been developed and patented by LINDE. The result is the most complete line of materials and accessories in the railroad industry.

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OXWELD RAILROAD DEPARTMENT

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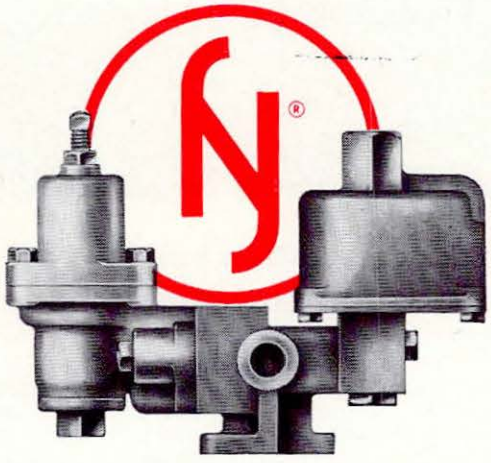

The Wheel Slip Controller and its associated devices can be applied to all existing air brake systems *with the minimum of modification.* Write for Circular 103 giving full information and installation diagrams.

The correction of "Wheel Slip" on Diesel-Electric Locomotives has been the subject of continuing study by The New York Air Brake Company. Now, you can have greatly improved locomotive performance and train operation with completely automatic, low cost —

PNEUMATIC WHEEL SLIP CONTROL

The Wheel Slip Controller responds to the existing wheel slip detection relays and within one-half second automatically applies a light brake application to the slipping locomotive unit. This in turn corrects most slips and restores the slipping wheel to train speed *without reduction in power.*

It comes to you, following thousands of miles of road tests over steep grades and frost-coated rails. In one test run of 1,400 miles it quickly and effectively corrected 95% of the slips with no reduction of power being delivered to the traction motors. Slips were corrected in 1 to 2 seconds from the time of indication. On the 5% not corrected by a pneumatic brake application, the slip was corrected by power reduction in the normal manner.

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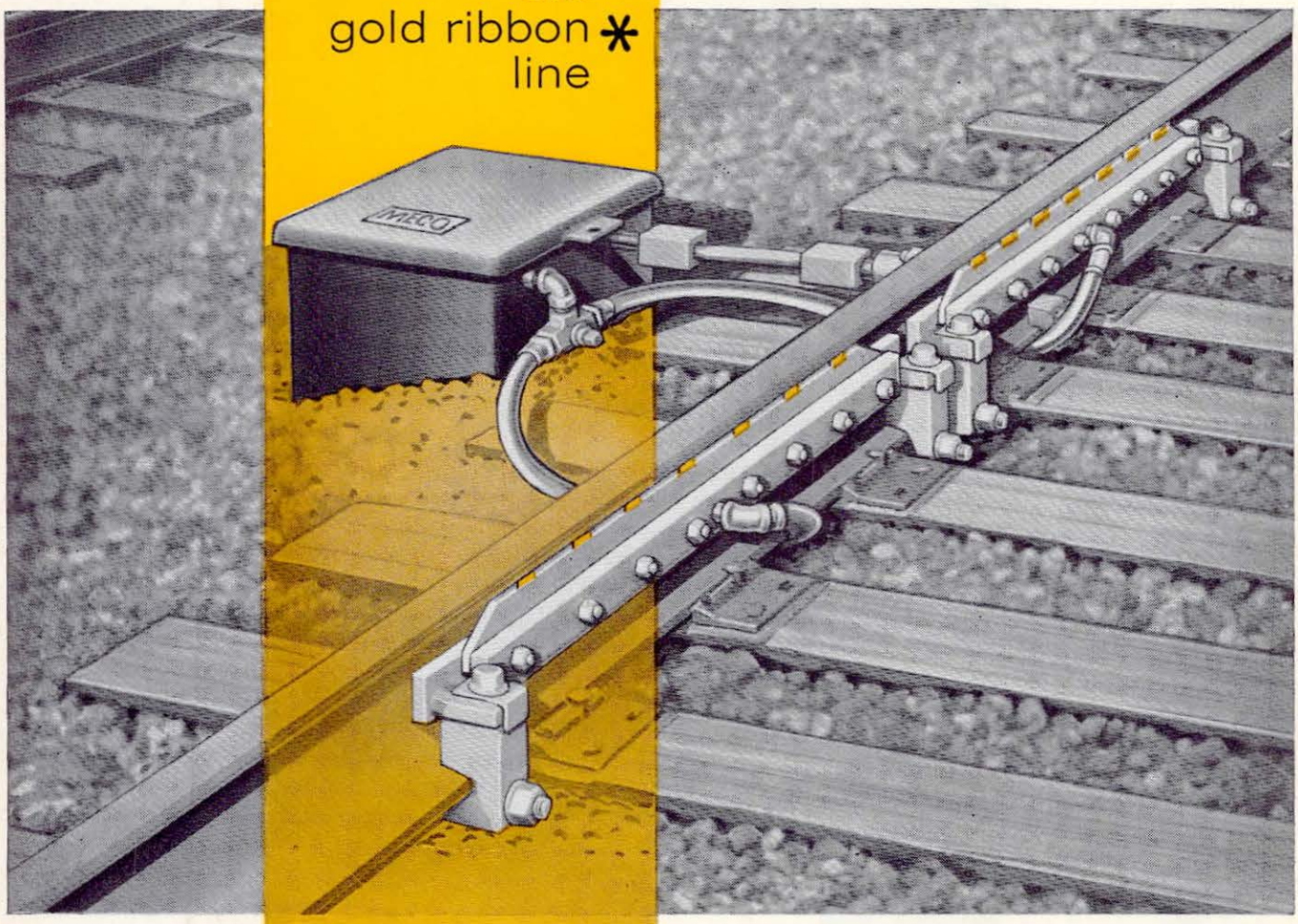

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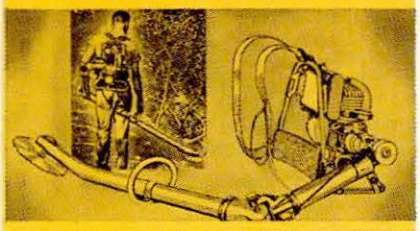

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$1 Billion Transit Orders Seen

► **The Story at a Glance: Pullman-Standard, though it has taken no orders yet this year for subway cars, anticipates that this aspect of the passenger-car industry will account for a billion dollars in orders over the next ten years. That, at least, is the forecast of Thomas C. Gray, engineering chief of Pullman-Standard's passenger car division. Here are Mr. Gray's reasons why.**

Pullman-Standard's Thomas C. Gray has studied the transport system of every metropolitan area from Los Angeles to Long Island. A major authority on commuter problems, Mr. Gray calculates that about 40 cities in the United States are going to reach the 750,000-population mark during the next 10 years. These cities are growing into a problem, Mr. Gray points out, one that requires planning. And this planning, he pointedly adds, has not always been available in the past.

An example of Mr. Gray's plain talking: "Something like two-thirds of the downtown Los Angeles land area is taken up by autos. That city has missed the boat and passed the point of smart planning."

Another example: "Toronto is a model of good transit and it's due to early smart planning. People up there, rather than drive downtown, take the subway to the theater and dinner with the result that land values downtown have risen 37%."

Gray is unsparing in his criticism: "We muddle along until an emergency arises. New York, for instance, probably will take major action when it wakes up one day to find automobiles caught in a traffic snarl that reaches from the Battery to Van Cortlandt Park."

Mr. Gray believes that early planning —for the metropolitan areas that now exist and for the 40 cities that he says are becoming metropolitan areas—is a matter of economic survival. San Francisco is his idea of a city that is headed in the right direction and none too soon either.

Until now an automobile-oriented city (in the U.S., cars are multiplying twice as fast as people), San Francisco's citizens will go to the polls next June to vote on a billion-dollar question. The issue, Mr. Gray says, will not merely be whether to provide a modern, coordinated public transport system for the San Francisco Bay area but whether the city will be assured proper growth. Meanwhile, more populous Los Angeles seeks financial backing for what would be a mere test system of rapid transit, although as one Angeleno authority admits: "The Toronto subway has a capacity of 35,000 passengers an hour while our four-lane freeway can handle only about 8,000."

While Mr. Gray contends that it is too late to guide the future growth of such cities as Los Angeles, he points out that such new fast-growing communities as Atlanta still can do much to avoid traffic congestion and preserve economic and cultural values.

Mr. Gray is emphatic about the visionary planning that characterizes some transit programs. A grave danger to transit planning, he says, is the exotic and the extravagant, and, in his view, monorail is both. Now in use at California's Disneyland, where it serves as a tourist attraction, monorail operates from an overhead beamway. Mr. Gray points out that this overhead suspension system is a refinement of the old elevated systems, built in the big cities around the turn of the century, and adds that in New York, the elevateds created slum areas.

Says Gray, with emphasis: "Monorail is exotic, costly and definitely not functional. Give me steel wheels on steel rails."

The rails are there, Mr. Gray reminds transit planners, and by merely adding spanking-new functional cars, rails can do the job of updating transit systems at modest cost and getting commuters out of their cars. Mr. Gray says he finds that the great majority of the public officials, transit executives and engineers he contacts are practical people, and adds that his stress on economics has won friends for Pullman-Standard all the way across the country, who, he has reason to hope will become customers before long.

"I tell them they should have air-conditioning," Mr. Gray says, "because in this affluent society the transit people have to figure out how to lure commuters from their uneconomical automobiles. For many of these transit people, the element of psychology looms large, so they think in terms of railway cars that have curved and tinted glass, chrome and all of the other jazzy appurtenances that are the trademark of Detroit."

While transit needs vary from city to city, Mr. Gray nevertheless feels there is "a great waste" in engineering and production costs resulting from custom building to each area's specifications. "Too much of this sort of thing," he tells prospective customers, "could make cars prohibitive in price."

THOMAS C. GRAY

But slick or functional, Mr. Gray warns there's no getting around the fact that new equipment is indispensable in a country where half the working population has taken to automobiles to get to work. Says he:

"Too many tractions and commuter roads are trying to do the job of moving people with Model T Ford-type equipment. They raise fares without being able to justify it and more commuters are lost to the cluttered highways."

Mr. Gray says Pullman-Standard is ready with new lightweight cars that are 10,000 pounds lighter than cars now in use. He figures this represents an annual saving of $465 a car, equal to 5 cents a pound. To this he adds $66 for reduction in body costs by use of aluminum. If these cars are amortized over 30 years and the money to finance them is obtained at 5%, the annual saving of $531 represents the ability to pay about $8,200 additional on original capital investment.

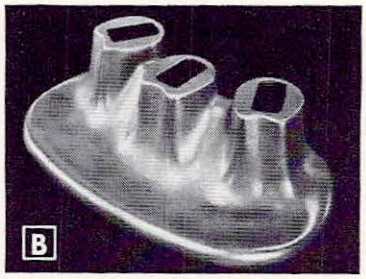
In New York, he estimates conservatively, present cars tote more than 1,000 pounds per foot of length, compared with 800 pounds for modern equipment. Considering the many thousands of cars in service, Mr. Gray calls this an opportunity to save millions of dollars annually.

"An unalterable problem of running a transit system," he says "is that peak operation is not steady. And the more stops the higher the cost. If people can get to their destination twice as fast in their automobile, it's going to be impossible to lure them back to public transit. They won't settle for a convey-

(Continued on page 68)

Product reference No. 54

which casting cost less?



answer: *Both castings A and B were made from the same prints. Casting A cost less per pound. But Casting B made by CHF actually showed a lower net cost!*

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U25Bs IN UP SERVICE

(*Continued from page 29*)

air system which provides cleaned air for diesel engine combustion, cools all electric equipment, and ventilates the operator's cab. Pressurization excludes dirt and water from all electric equipment, a feature that reduces maintenance. All air is handled by a single, gear-driven fan and blower unit, replacing as many as eight auxiliary blowers and individual control devices which are used on some locomotives.

Another feature is the simplified cooling system. Diesel-engine cooling water temperature is regulated by controlling water flow through the radiator. This is done by a thermally operated flow control valve which bypasses the radiator until the engine temperature reaches 170 deg F. Water is then admitted to the radiator and its flow modulated to hold practically constant engine temperature, regardless of load or ambient conditions. Radiator sections drain automatically when the flow is cut off, thus precluding the possibility of freezing.

Carefully study of flow patterns for air, water, fuel and electricity resulted in greatly simplified piping and wiring arrangements. For example, the 40 to 50 joints found in conventional lube-oil piping have been reduced to 12 on the U25B.

This locomotive also has fewer electrical components than competitive diesel-electrics. There are only eight rotating machines as compared to as many as 20 on some existing locomotives.

Crew Reaction Good

Favorable reactions of operating crews have been noted throughout the demonstrations, GE reports. In some instances, suggestions made by railroad personnel during the demonstration shakedown period have been adopted for the commercial versions of the U25B.

Railroad personnel have commented on the quiet, comfortable operator's cab, and on the convenient arrangement of the engineman's controls. Location of the electric control compartment on the side of the locomotive platform and its pressurization with cleaned air are highly favored by railroad mechanical departments.

The engine-water temperature control system stabilized water temperatures, even during daytime operation in hot weather. This was particularly noted in desert operation in the Southwest.

Mechanical personnel performing the required inspections frequently commented on the simplicity of the apparatus layout, the accessibility of equipment, and the effectiveness of the air-cleaning system.

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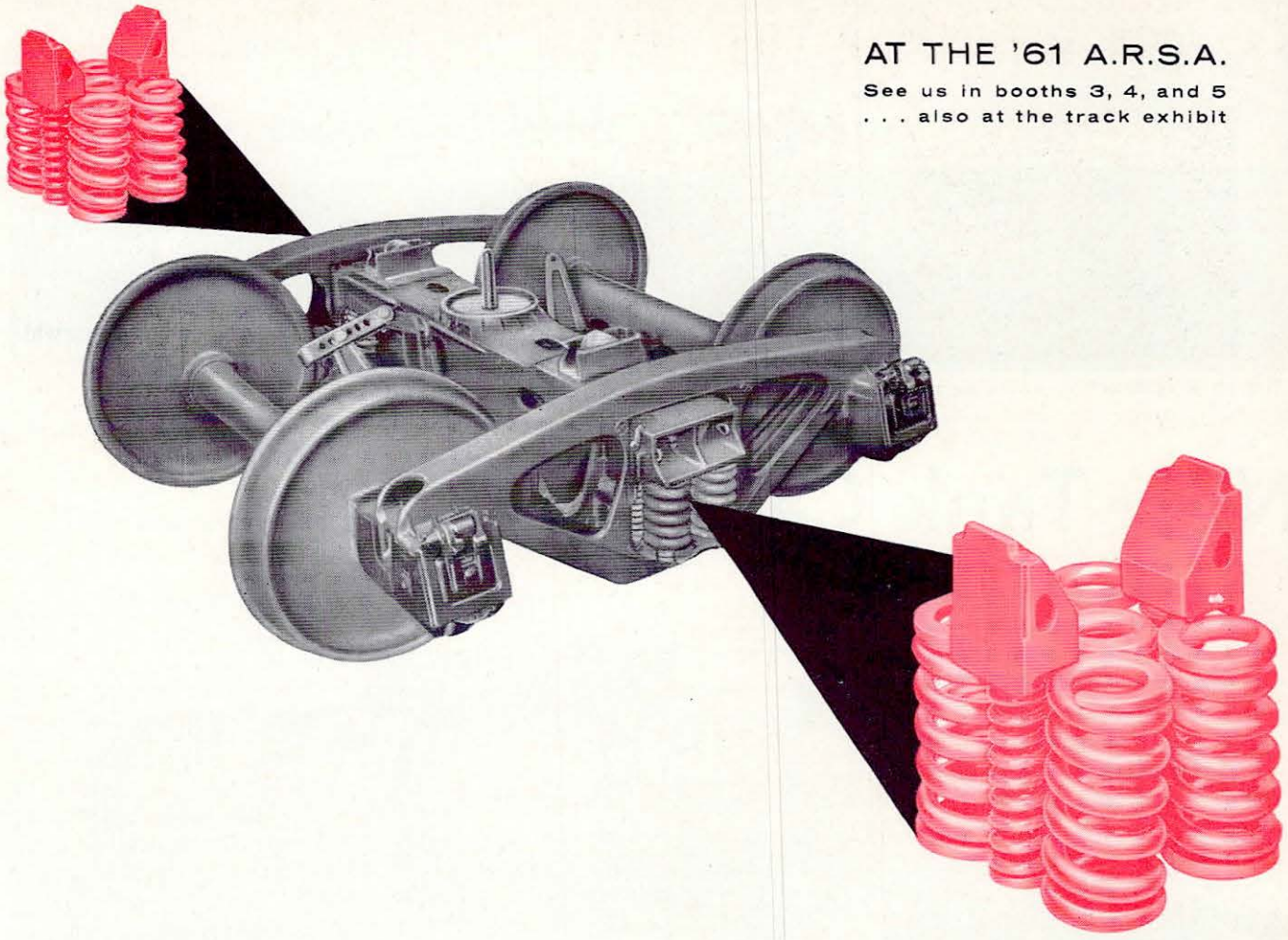

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New Tank Cars Developed...

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...For 'Space-Age' Ladings

Space-age technology is calling forth new ingenuity on the part of railroad equipment designers.

High-capacity tank cars are now handling cryogenic (super-cold) liquids which are used for rocket fuels and oxidants. Specialized "thermos bottle" cars have recently been placed in service for moving liquid oxygen and liquid hydrogen. As a liquid, oxygen has a temperature of minus 297 deg F; liquid hydrogen, minus 423 deg F.

Union Tank Car Co. is putting into service seven 15,000-gal liquid oxygen (Lox) tank cars. In its liquid form, oxygen is important not only in rocket and missile firing, but also in steel manufacturing, steel fabrication, welding, and in the medical and chemical fields.

General American has completed six liquid-hydrogen tank cars which, last week, were put into coast-to-coast movement by Linde Co., Division of Union Carbide Corp., under a $31-million supply contract with the National Aeronautics and Space Administration. Liquid hydrogen is used as a rocket fuel.

Insulation of these super-cold ladings, and protecting them from shocks, presented problems in the designs of both cars.

In designing the 65-ft Lox car, Union Tank utilized a shell-within-a-shell principle with a vacuum in between. The space between the shells is also packed with 1,800 cu ft of perlite, a flour-like insulating material.

The shells are held together by an arrangement of small diameter rods suspending the inner shell within the outer shell. This suspension system is designed to withstand longitudinal shocks equal to seven times the weight of the inner shell when it is loaded, and vertical and lateral stresses three times those due to the weight of gravity.

Unlike other tank cars now in liquid oxygen service, the Lox car is designed with all loading and unloading fittings at the top and center of the car. The inner shell horizontal suspension system for absorbing train impact loads is also located in the center of the car.

These centering features permit contraction of the inner shell, which is as much as 1½ in. when loaded, to take place toward the center from each end without stressing the fittings and suspension system.

In designing and fabricating the shells for the Lox cars, Graver Tank, a Union Tank subsidiary, drew on its experience in constructing Lox storage tanks for the armed forces and other cryogenic containers for industry. Shells for the Lox cars were fabricated at

(Continued on page 69)

Santa Fe

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PRESIDENT

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CHICAGO • NEW YORK • DENVER • ST. LOUIS • BOSTON
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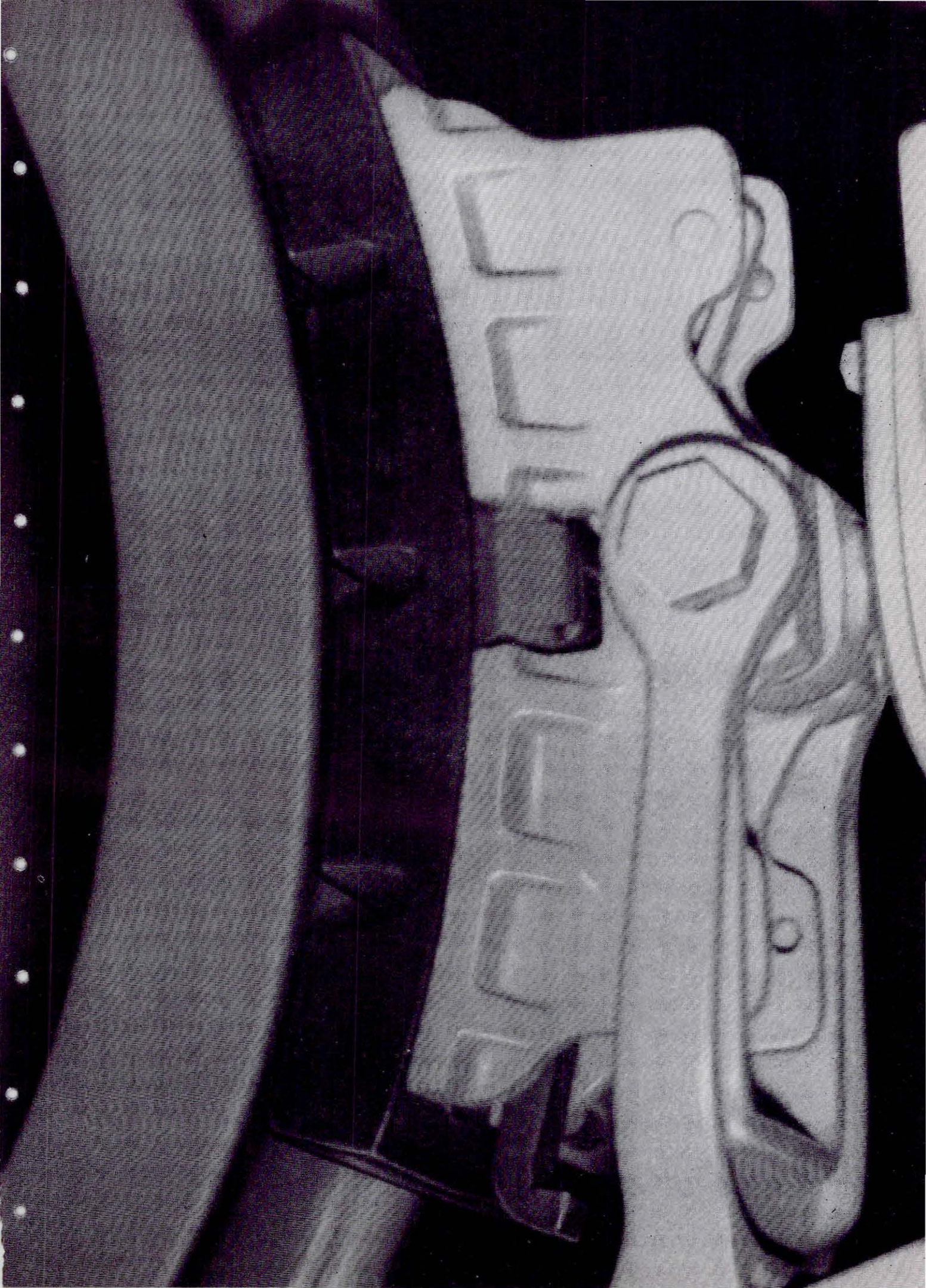
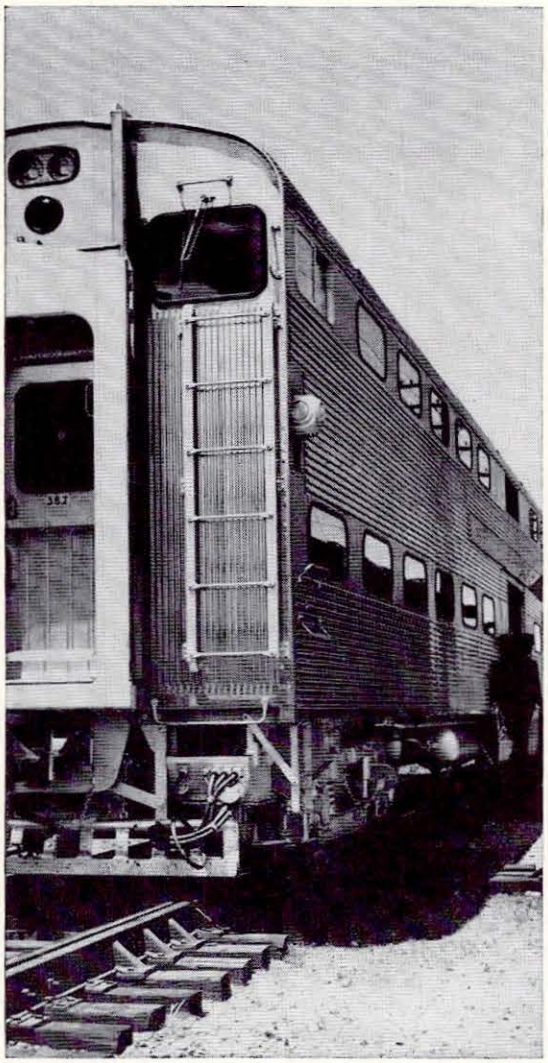
IMPROVED FAIR® RAIL ANCHOR



The Milwaukee Road has

COBRA® SHOES

on their new bi-level suburban fleet. Here's what The Road will get:



- Lowest shoe cost per mile
- Improved wheel performance
- Lightest-weight truck and brake equipment
- Freedom from thermal cracked wheels
- Satin smooth ride and stops
- Fewer replacements and lower maintenance costs

Equipping 40 new bi-level stainless steel coaches with Cobra Shoes makes it possible for the road to use lightest-weight truck brake equipment for its dual-control suburban train operations. Smooth, highly polished wheels provide best wheel to rail adhesion. Lower fuel costs, lower wheel costs, and Cobra Shoes mean lower operating costs for The Milwaukee Road each year. The coaches will ride better, too, because of the uniform braking characteristics of the Cobra Shoe, the smooth, highly polished wheels and the reduction of unsprung dead weight. Let our representatives give you more detailed information.

THE COBRA SHOE . . . a product of the combined research facilities of . . .

Westinghouse Air Brake Company
Specialists in Braking

Johns-Manville Corporation
Specialists in Friction Material

RAILROAD FRICTION PRODUCTS CORPORATION
Wilmerding, Pennsylvania

RECONDITIONING and UPGRADING "AB" BRAKE EQUIPMENT

Quality Materials — Top Service — Priced Right !

You get expert, guaranteed service on brake equipment in our shop so advantageously located for fast service and economy — where expert repairmen work with the most modern gauges and tools.

All "AB" valve parts that come to us are accurately checked for wear to determine need for repair or renewal — then economically serviced in accordance with most recent AAR code specifications.

- We will COT&S your brakes, in accordance with AAR standards for application to existing or new equipment.
- We will buy your old brakes; sell you fully reconditioned guaranteed replacements.

We carry a stock of reconditioned air brakes and parts ready for immediate shipment.

MORRISON RAILWAY SUPPLY CORP.
814 Rand Bldg. Buffalo 3, N. Y.

RAILROADING AFTER HOURS WITH JIM LYNE

GOVERNMENT EFFICIENCY GAGE—The other day I heard a couple of fellows arguing about national defense, foreign aid, inflation and other complicated governmental activities on which neither of them was well posted. Isn't it fair, when such questions are raised, to assume that government action in areas we know little about is probably just about as smart as it is in those areas with which we are familiar?

For example, railroad people have first-hand knowledge of how wise and farsighted government has been in dealing with transportation. Is there any reason to believe that it is any smarter, or less so, in providing for national defense, combatting inflation and all the other problems it deals with?

SIMPLE RATES—My friend Gordon Lindsay, a member of a U.S. group studying railroads in Colombia, tells me of the simple rate-making practices in that country. All loading and unloading (including CL) is done by railroad employees, so there's no rate difference between CL and LCL—"just a straight rate in pesos per ton, with a minimum charge for a ton on shipments exceeding a given cube—otherwise the minimum charge is 5 pesos. All rates are built on a ton-kilometer scale. Tank car and livestock rates are per car—all others per ton. Rates are often published, with a difference between 'ascending' and 'descending,' the downhill rates being lower."

Freight trains carry no cabooses. The conductor rides the engine and the "brakemen-loaders" ride the tops of cars.

SMART COMPETITORS—I don't see any harm in giving a competitor credit where he deserves it—and the ingenuity of these airlines in promoting higher utilization of their space capacity is really something. Take their wrinkle of hauling teen-agers for half-fare, but not assigning them space until the last minute. The Post Office, of course, is helping the effort along (to the railroads' loss) by flying surface-rated mail, only to the extent that unused plane space is available.

It takes imagination (and sympathetic regulation) to fill spare space at bargain rates, without at the same time jeopardizing full-rated business. Anybody have any ideas as to how railroads could apply this principle—to freight as well as to passenger traffic?

'BIG BOY' FILM—Not long ago I had a look at a film the Union Pacific has put out on its last series of steam locomotives—the so-called Big Boys, which were used until comparatively recently in helper service at Sherman Hill.

The film has many splendid shots, not only of the "Big Boy," but of other steam power—and it is shown without the sentimentality which sometimes creeps into the portrayal of steam operations.

Steam was not outmoded because of any inherent defects, or lack of zeal in constantly improved technology—but by an entirely new technology. It was like the U.S. clipper ship, the most efficient design of sailing vessel ever produced. But the best of the clipper ships wasn't quite as good, economically, as a rather primitive steamship.

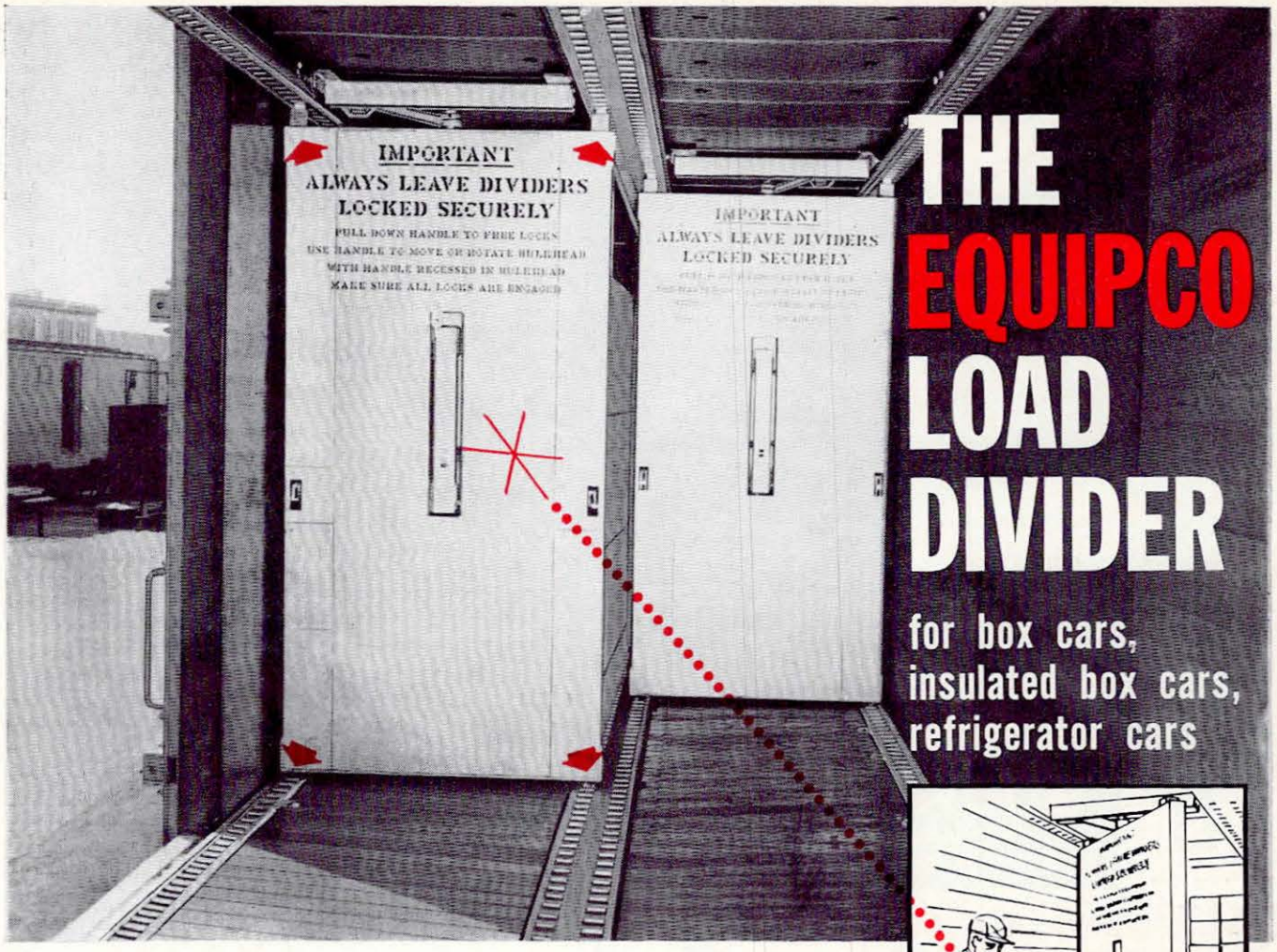
It might well be that we haven't yet heard the last word as to the ideal form of motive power.

HEAVIER WHEEL LOADS?—I don't want to get into the middle of the argument about safe wheel-loading—for one reason, because I don't know anything about it. Some railroad managements are, apparently, convinced that safety requires larger wheels for greatly increased loads, while others are equally sure that there's enough of a safety factor in wheels of existing sizes to take on considerably heavier loads without undue danger.

This is a healthy argument whoever wins, because the end result is bound to be heavier loading per car, however achieved. The unused cubical or weight capacity in freight cars is the railroads' "secret weapon." When it is fully utilized in bringing down the average per-ton cost of transportation service, railroads are going to be in a much stronger competitive position than they are, so far.

52 BARGES IN A TOW—R. H. Mills of Greenville, Miss., has sent me a newspaper picture showing a tow of 52 barges bound from New Orleans to Minneapolis, which would make several trainloads.

When I see the kind of things these barge operators are doing—and how they are expanding—I am more and more puzzled as to why Uncle Sam finds it necessary to keep them on the public payroll (in the form of toll-free channel maintenance). Are these barge operators hard up, or about to disappear, or what?



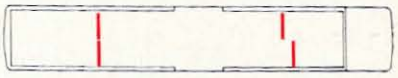
THE EQUIPCO LOAD DIVIDER

for box cars, insulated box cars, refrigerator cars

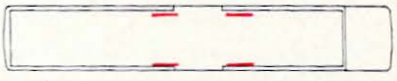
Gives you 4-point locking... with a single operating bar!

- **Reduces loss and damage claims**
- **Cuts loading time . . . reduces dunnage**
- **Can be load-sealed for LCL shipment**
- **No loss of refrigeration efficiency**

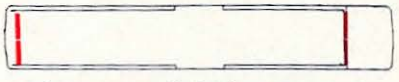
Easy-to-use Equipco Load Dividers roll into place with minimum effort. Fit snugly against lading and are locked into position at 4 points—2 top and 2 bottom—with a *single operating bar*. Permits car to be segmented for profitable and safer transit of lading. Dividers are permanently secured—no loose parts. Thoroughly use-tested to meet both railroad and shipper's requirements.



Can be positioned to meet practically any lading needs.



No interference even when loading both ends of car at same time.



Any one or all dividers store out of way next to side or end walls.

"Makers of EQUIPCO Hand Brakes . . . Vertical, Drop Shaft and Lever Types"

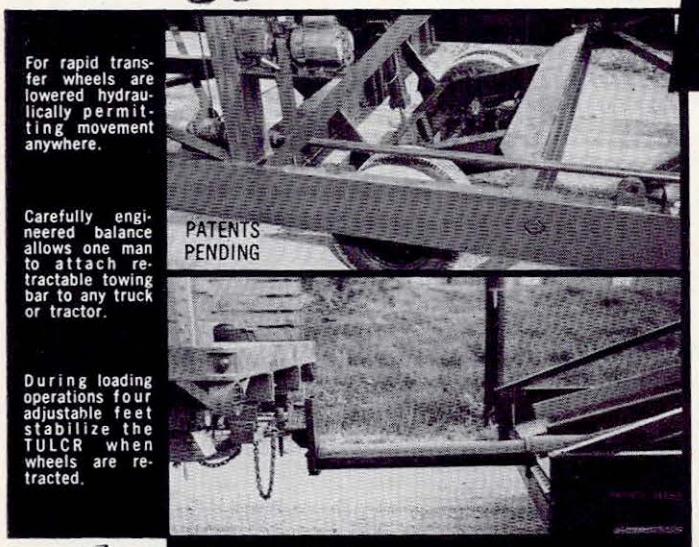
Equipco UNARCO

EQUIPMENT SPECIALTIES DIVISION
Union Asbestos & Rubber Co. Dept. RA961
6 N. Michigan, Chicago 2, Illinois

See and operate the new Load Divider at the Allied Railroad Supply Association Convention. Visit our exhibit at Track 3N.

Rugged Portability...

is the KEYNOTE of the BUCK Model TULCR Automobile Unloader


For rapid transfer wheels are lowered hydraulically permitting movement anywhere.
Carefully engineered balance allows one man to attach retractable towing bar to any truck or tractor.
During loading operations four adjustable feet stabilize the TULCR when wheels are retracted.
PATENTS PENDING

RUGGED — to meet the demands of many years of continuous use under all conditions.

PORTABLE — to allow for swift position changes from one track area to another or from one end of a car to the other.

And, there's no need to worry about a dock. The Buck TULCR unloads to the ground and reaches the top deck of a tri-level car with ease.

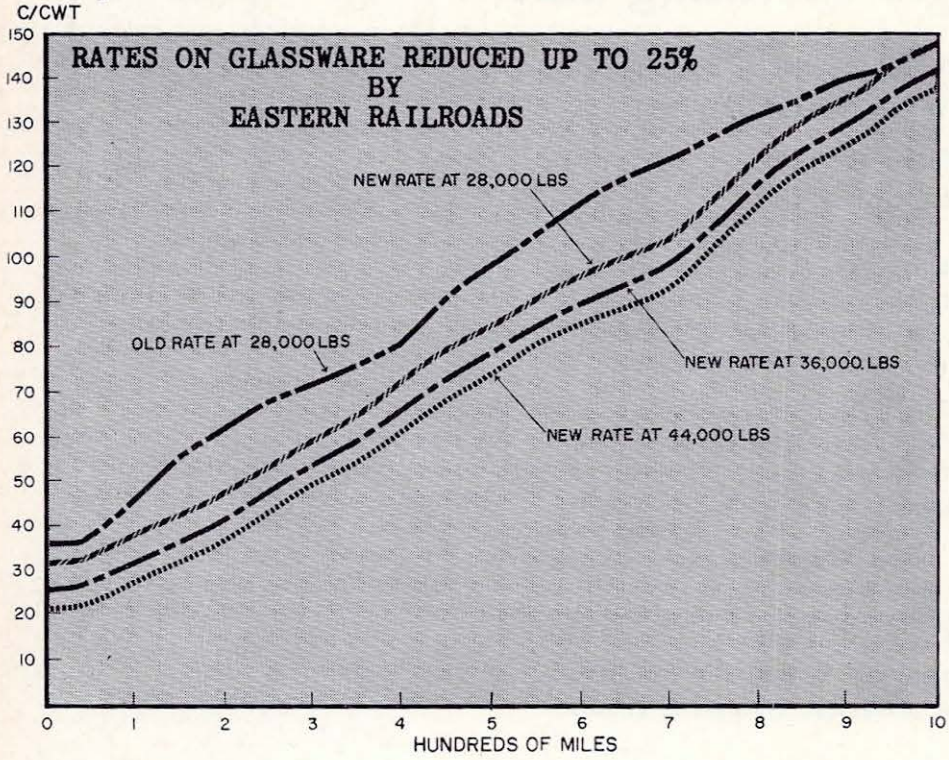
Like all 8 Buck model loaders and unloaders its unique segmented ramp design allows for a sensible, safe angle of inclination even at its highest point.

You are cordially invited to see a Buck unit in action at the ARSA Convention — Chicago, September 10-13.

BUCK EQUIPMENT CORP.
720 Anderson Ferry Road
CINCINNATI 38, OHIO GR 1-8580

optima factum

Glassware Rates Reduced By Eastern Railroads



Effective Aug. 10, 1961, Eastern Railroads have published reduced rates on glassware within Official Territory. The adjustments provide for substantial reductions of many of the former rail rates at the 28,000-lb minimum weight. In addition, new scales of rates at 36,000- and 40,000-lb minima—reflecting rates lower than those applicable on 28,000 lb—have been provided. These new bases of rates appear in Agent Hinsch's Tariff E-2009-D, Supplement 43, Item 4080.

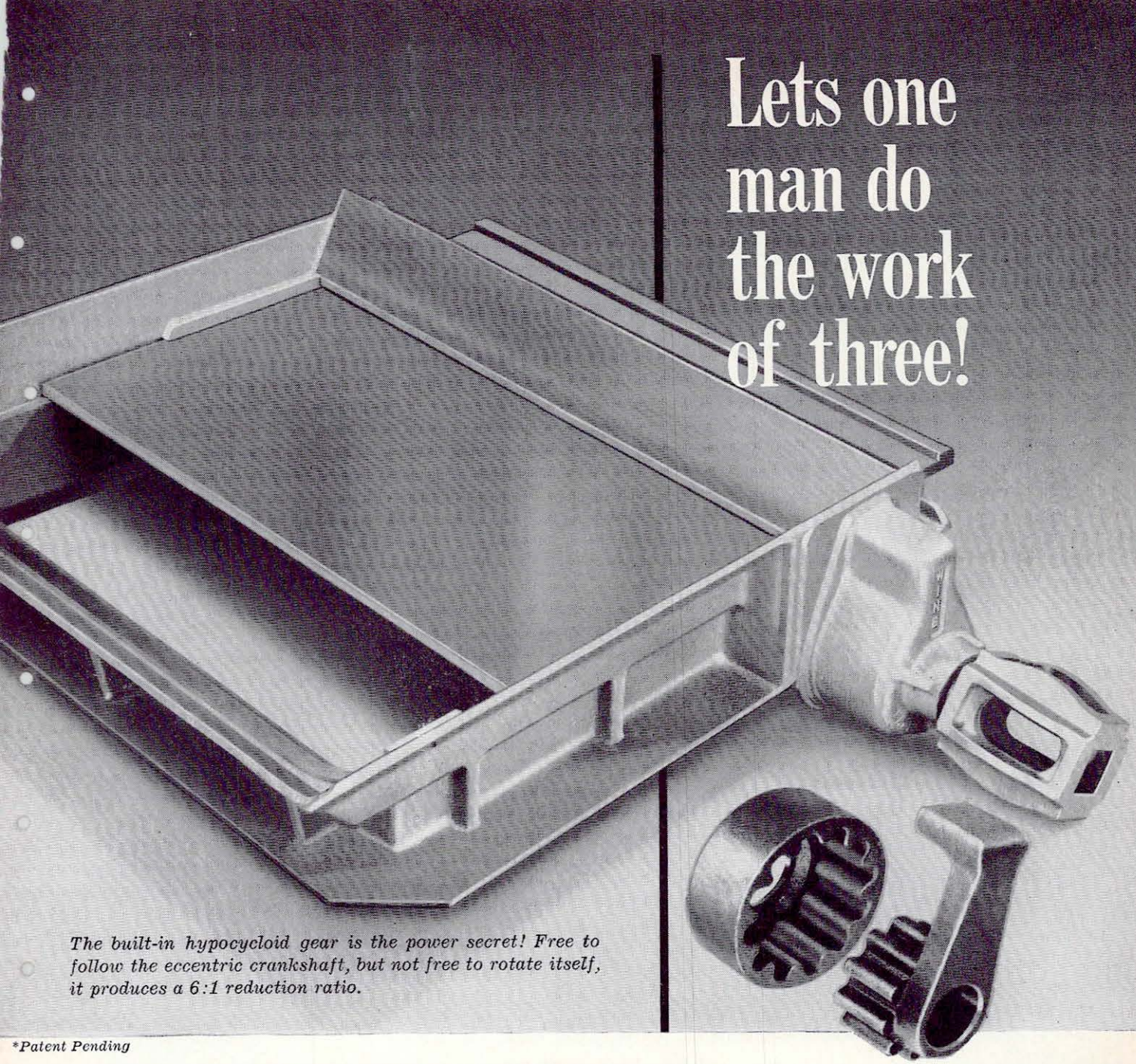
Reductions in cost to railroad patrons below the rates previously charged are portrayed in a chart prepared by the commercial research department of Traffic Executive Association—Eastern Railroads.

For example, at 700 miles, a 28,000-lb shipment under the old rate cost $1.21 per cwt (including Ex Parte 223). Under the new rates, the cost at 700 miles is $1.02 per cwt on 28,000-lb, 96¢ per cwt on 36,000-lb and 91¢ per cwt on 44,000-lb shipments.

Up to 20% of the shipment weight may consist of glassware valued in excess of 35¢ but not more than $5.00 per pound.

Exact information on the new reduced charges for specific movements is available from local railroad freight agents and freight sales departments.

Lets one man do the work of three!



The built-in hypocycloid gear is the power secret! Free to follow the eccentric crankshaft, but not free to rotate itself, it produces a 6:1 reduction ratio.

**Patent Pending*

NEW! Wine Power Geared* Discharge Gate

EVEN UNDER A 70-TON LOAD one man can open this new gate. Accurately machined mating surfaces provide bind-free operation and a tighter seal. No more sledging or car damage in attempts to open "frozen" hopper doors. Electric steel castings eliminate distortion.

PRECISION-MESHED GEARS without costly machining! Amazingly accurate shell molding process helps keep unit competitively priced despite *Power-Gear* features. Rack-and-pinion principle assures parallel operation without side binding. All bearing surfaces are lubricated with Moly Disulfide.

COMPLETELY PREASSEMBLED for easy installation, ready for welding. No further fitting, no extra parts required during assembly of car. 13x24" opening fits most standard chutes. Interchangeable with most present gates; equipped with standard boot groove. Conforms to all recognized unloading devices. Now in service on six major railroads and a car leasing company.

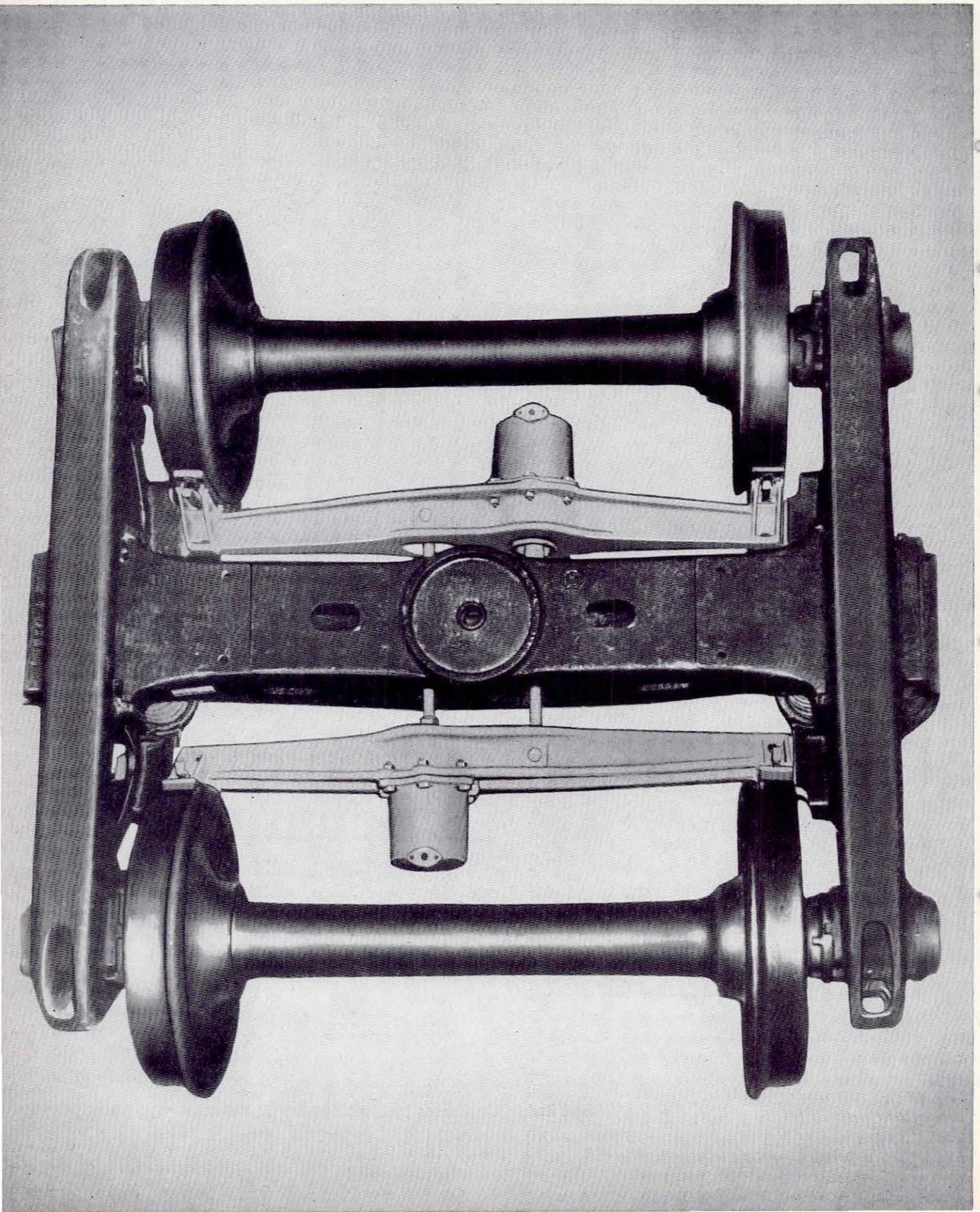
A TRIAL APPLICATION WILL CONVINCE YOU! Complete specifications and application data on request.

WINE
Railway Appliances

See this product at
BOOTH 235
at the ALLIED show.

WINE Railway Appliances by UNITCAST CORPORATION • TOLEDO 9, OHIO

WABCOPAC® Simplified Brake Unit



assembles as truck component

The unique WABCOPAC Brake Unit, which consists of two assemblies joined by push rods that pass through openings in the truck bolster, offers car designers and builders greater flexibility with these important advantages:

LOW PROFILE—Lower profiles and greater car capacity are possible by elimination of conventional brake rigging from beneath the car body. The WABCOPAC Brake Unit has particular merit in the modern trend to specialized cars such as auto racks, containers, large tanks, piggybacks, hoppers, etc.

USES COBRA* SHOES—COBRA Shoe's frictional characteristics permit use of a single shoe brake and lower braking forces for the entire range of car weights. Complexities of clasp brakes are eliminated from freight car construction.

NO SLACK ADJUSTER REQUIRED—Piston rod travel is sufficient for full wear of the shoes, and shoe forces are always in balance. No inspection or adjustment required for the full shoe life.

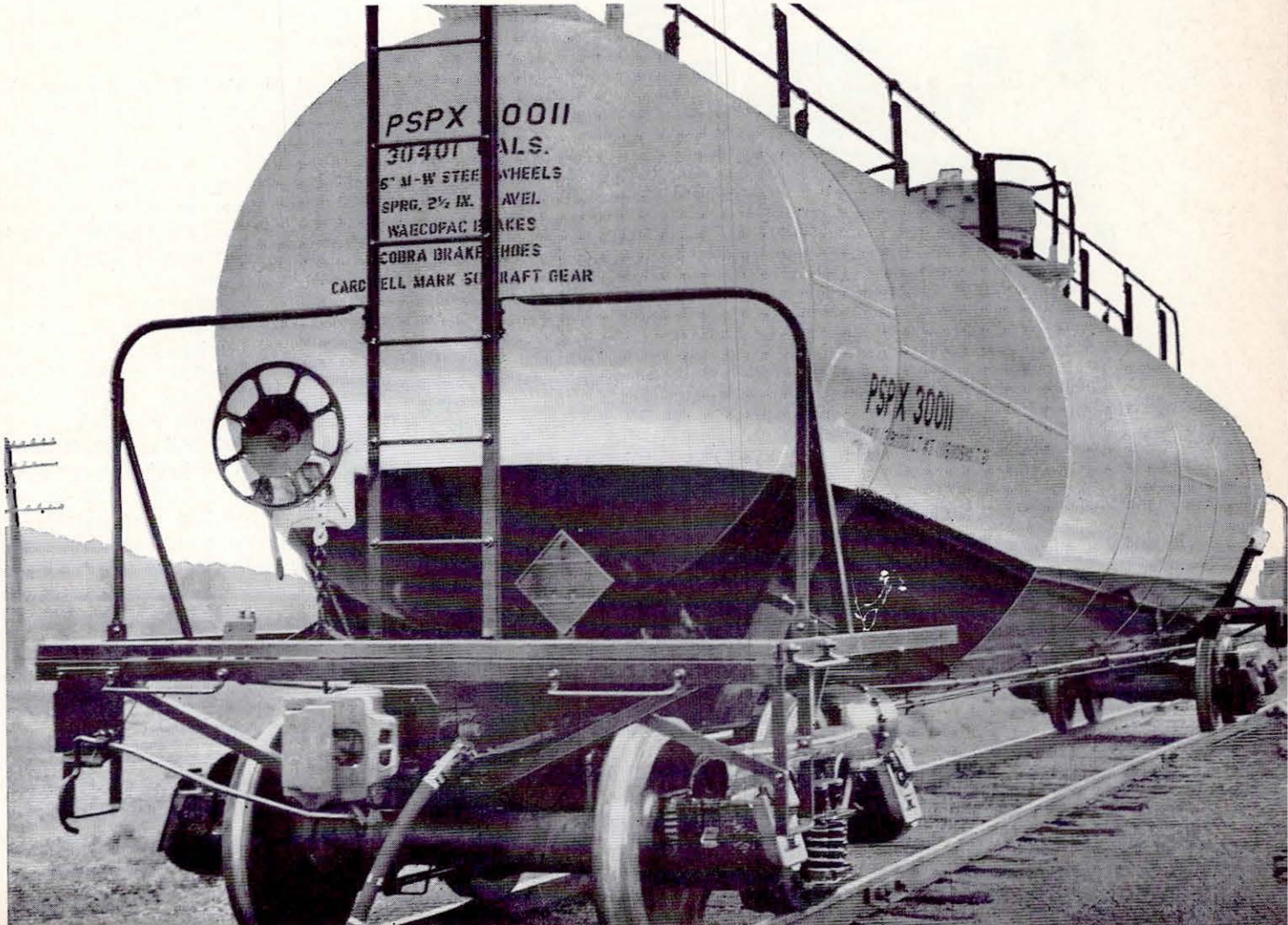
registered trademark of Railroad Friction Products Corporation

OTHER IMPORTANT FEATURES OF THE WABCOPAC BRAKE UNIT ARE:

- Assembles as a truck component—makes installation easier and less expensive.
- No additional levers, hangers or brackets are needed.
- Fewer pins—and hardened so they wear less.
- 2 WABCOPAC Brake Unit sizes—one fits 50-70 ton cars and the other fits 90-100 ton cars. (Empty and load brake arrangement available for both sizes.)
- Bolsters available with required openings.
- Identical braking forces on all wheels.
- Balanced forces on truck.
- Positive release.
- Less variation in rigging resistance.
- Lowers car weight.

Westinghouse Air Brake
COMPANY
AIR BRAKE DIVISION WILMERDING, PENNA.

One of 108 similar tank cars built by General American Transportation Corp. and equipped with WABCOPAC Brake Units.



A+dlake

SUPERMAKER

Aside from Adlake's hundreds of catalogued items for the railroad, look to Adlake for *made-to-order* products, too. Adlake has the facilities to extrude, cast, machine, and finish metals . . . fabricate products of glass, cloth, rubber, aluminum, copper, brass and steel. ALL under one roof, Adlake the SUPERMAKER is the industry's "supermarket" among suppliers.

THE ADAMS & WESTLAKE COMPANY

Factory & General Offices: Elkhart, Indiana, Phone COngress 4-1141
Chicago Sales Office: 135 South LaSalle, Phone FInancial 6-6232
New York Sales Office: 50 Church Street, Phone COurtland 7-0073

TRANSIT ORDERS SEEN

(*Continued from page 53*)

ance that travels less than 45 miles an hour. And most of the old equipment, at best, is offering 20 miles an hour.

"For the transit people, getting rid of the Model T is a must. At that, a lot of them are breaking even with that kind of equipment. Imagine what they could do with modern equipment. They can't afford not to do it."

After surveying every metropolitan area in the United States today, Mr. Gray estimates that 9,000 subway and commuter cars will be sold during the next 10 years. At an educated guess, he puts the average price of such cars at $120,000 apiece, adding up to an outlay of over $1 billion.

In the Gray book, there are precious few heroes in the field of metropolitan transit in the United States, but Chairman of the Board Ben Heineman, Chicago & North Western, is one. Among Mr. Heineman's first decisions at C&NW was the program for scrapping the road's obsolete Chicago suburban facilities, which were running steam engines, ancient cars and a multi-million-dollar annual deficit. Through dieselization, modernization of ticket and collection methods, a survey of his market potential and an increase in fares (in return for a promise of top-flight service), Mr. Heineman brought back to the C&NW thousands of commuters who had taken to cars and buses.

To get the kind of cars he wanted, Mr. Heineman went to Pullman-Standard, which designed well-lighted, air-conditioned and electrically-heated double-deck coaches. These double-deck trains seat approximately 1,600 people. Only an ocean-going luxury liner could accommodate more passengers, Mr. Gray asserts. The cars have eased congestion on the highways and made it easier for shoppers as well as workers to get into the Loop.

Another innovation on the North Western that Mr. Gray contends could be studied with profit by other transit people is the Push-Pull system. It takes a lot of time and switching to move an engine from one end of a train to another in stub terminals. But with Push-Pull, the engine pushes the cars into the station and pulls them out. A train can now enter a terminal, discharge passengers, reload and be out in 10 minutes.

Says Mr. Gray, who has made a life career of railroading: "Maybe Heineman—a lawyer by profession—brought this all off because he's not a railroader by training and didn't know enough to say it's impossible."

'SPACE-AGE' LADINGS

(*Continued from page 56*)

Graver's East Chicago, Ind., plant, and the cars were assembled at Union Tank's Whiting, Ind., plant.

The first two Lox cars have been leased to Canadian Liquid Air Co. through Products Tank Line of Canada, Ltd., another Union Tank Car subsidiary. Five similar tank cars are being leased to the National Cylinder Gas Division of the Chemetron Corp.

The 28,300-gal Linde tank cars which began regularly scheduled coast-to-coast runs with liquid hydrogen last week also are built on the thermos-bottle principle. There is a vacuum between the inner and outer shells and the inner tank is wrapped with 1 in. of Linde-developed "Super Insulation," a blanket consisting of many alternate layers of aluminum foil and glass fiber. According to a Linde spokesman, this insulation made construction of these tank cars economically feasible.

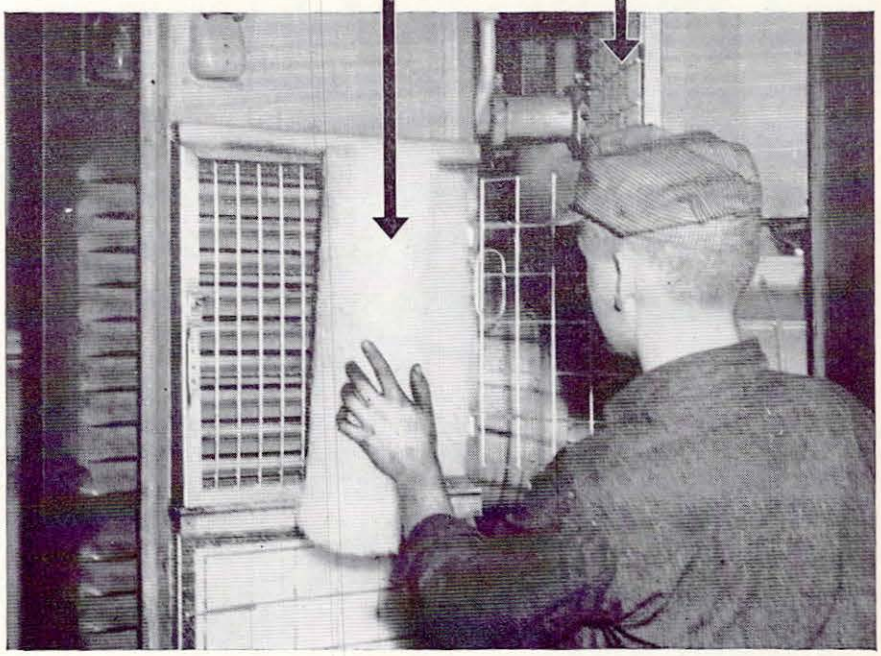
Because structural supports between the inner and outer shells represent paths for heat flow, it was necessary to make these supports as small as possible. To reduce the size of the members and yet resist the longitudinal impacts developed in train operation, General American chose the Hydra-Cushion underframe. Tests have shown that end impacts of 7G intensity are reduced to 3G's on the loaded inner shell.

Linde's cryogenic engineering know-how and General American's experience in tank car design and construction made it possible for the liquid hydrogen jumbo to be placed in service less than eight months after planning began. General American fabricated the outer shell and underframe at its Sharon, Pa., plant. Inner tank construction, insulation, final assembly, and leak testing were performed at Linde's Tonawanda, N. Y., factory.

Efficiency of the Super Insulation is such that the 6½-day cross-country haul can be made with an evaporation loss of only about 0.3% of capacity per day.

The Linde company has been operating a 6-tons-per-day liquid hydrogen plant at Torrance, Calif., for more than a year and is currently building a 26-tons-per-day facility at Ontario, Calif., to meet growing supply requirements. Linde's transport fleet will keep West Coast rocket development centers supplied with liquid hydrogen from the government's production facility at West Palm Beach, Fla., until the Ontario installation is put into operation in mid-1962.

AAF AMER-kleen air filters do a better job at lower cost on engine intakes and carbodies



REPLACEABLE GLASS FIBER FILTERS PROVE SUPERIORITY IN RAILROAD SERVICE

On-the-job operation in locomotives has clearly demonstrated these three major competitive benefits of AMER-kleen air filters:

1. *LOWER INITIAL COST.* The cost of metal panel filters is at least 70% more than for AMER-kleen retaining frames.
2. *LOWER FILTER OPERATING COST.* It's far less expensive to replace AMER-kleen glass fiber media at regular intervals than to wash and re-oil metal filters.
3. *LOWER LOCOMOTIVE MAINTENANCE COSTS.* AMER-kleen allows far less dirt (about half that of metal filters) to get to—and into—your equipment.

ONLY AAF MAKES ALL KINDS. AAF makes all three types of filters used in engine intake and carbody service—metal, oil bath and AMER-kleen. We *recommend* AMER-kleen, and we think you'll *demand* AMER-kleen when you know all the facts. Write for a free copy of AMER-kleen Bulletin 125. Address: J. K. Sparrow, Engine & Compressor Department, American Air Filter Company, Inc., 111 Central Avenue, Louisville, Kentucky.

See the Amer-kleen display at the Convention—booth 26

AAF American Air Filter

BETTER AIR IS OUR BUSINESS

HELD IN
HIGH ESTEEM FOR
THEIR LONG LIFE
AT LOW
MAINTENANCE COST

There's one thing about any International Caboose. It will render long years of low cost service despite modern high speed, long trains.

There's another thing, too. Each model is a masterful contribution to train crew safety and efficiency.

When you add all these features together it totals up to one of the most attractive investments a railroad can make. And that's exactly why so many are making it right now. For full details, write International Car Division, 2485 Walden Ave., Buffalo 25, N. Y.

INTERNATIONAL Cabooses

Rolling up Records for Safety and Economy on America's Leading Railroads

INTERNATIONAL CAR DIVISION

A Subsidiary of Ryder Systems, Inc.

R. M. Hill
A&S

Graham Lawson
CPR

People in the News

ALTON & SOUTHERN.—**R. M. Hill,** traffic manager—sales and service, St. Louis, elected vice president—traffic, succeeding **R. S. Boston,** who retired Aug. 31. **W. J. Ubben,** traffic manager—rates and divisions, appointed general traffic manager. **Carl Hartenberger** appointed manager rates and claims.

ATLANTIC COAST LINE.—**F. B. Robins,** superintendent terminals, Richmond, Va., appointed superintendent, Trailer-Train Service, Jacksonville, Fla. **A. R. Howard** appointed assistant to freight traffic manager, Jacksonville.

BALTIMORE & OHIO.—**R. C. Diamond,** superintendent, Ohio-Newark division, Cincinnati, Ohio, appointed assistant to general manager, Western Region, at that point, succeeding the late **C. A. Boyd. R. H. Priddy,** assistant superintendent, Monongah division, Grafton, W. Va., named superintendent, Ohio-Newark division. **R. D. Pomeroy,** trainmaster, Baltimore, succeeds Mr. Priddy as assistant superintendent, Monongah division.

BURLINGTON.—**Bert Vickery, Jr.,** general agent, Omaha, Neb., appointed division freight and passenger agent, Hastings, Neb., succeeding **Dwight Kastrup,** retired. **Wayne Elliott, Jr.,** chief clerk to the freight traffic manager, Omaha, replaces Mr. Vickery, and in turn is replaced by **J. R. Scalzo,** commercial agent, Deadwood, S.D. **Emil C. Ribick,** city passenger and ticket agent, Quincy, Ill., promoted to district passenger and ticket agent there. **P. L. Bair,** district passenger agent, St. Louis, retired Aug. 31. **C. B. Baird,** passenger agent, Chicago, named city passenger agent, St. Louis.

CANADIAN NATIONAL.—**W. Glenn Byford** appointed superintendent of the road transport department, Winnipeg, succeeding **Martin E. Conway,** who has been transferred to a similar position in Montreal.

CANADIAN PACIFIC.—**Graham Lawson,** assistant manager of stores, Montreal, Que., promoted to manager of stores, succeeding **S. L. Kelsall,** who retired Aug. 31.

CHESAPEAKE & OHIO.—**W. P. Thurston,** assistant to vice president, Richmond, Va., retired Aug. 31. **Roger W. Thweatt** appointed assistant coal traffic manager, Richmond, and will assume Mr. Thurston's duties. **Leo J. Schneider** named assistant coal traffic manager, Cleveland. **Carl S. Dennis,** fuel service engineer, transferred from Richmond to Huntington, W. Va. **J. R. Brian**

French named coal traffic agent, Milwaukee, Wis.

CHICAGO & ILLINOIS MIDLAND.—Sidney F. Smith, general agent, Peoria, Ill., retired Aug. 31. **Robert J. Rushford** appointed acting general agent, Peoria.

DELAWARE & HUDSON.—Raymond H. Ely, general auditor, retired Aug. 31.

GULF, COLORADO & SANTA FE.—L. B. McCune, assistant signal engineer, Gulf Lines, Galveston, Tex., appointed signal engineer there, succeeding **W. L. Talevich,** who retired Aug. 31. **J. O. Cox** replaces Mr. McCune.

LOUISVILLE & NASHVILLE.— Robert M. Triplett, supervisor of employment, named supervisor of employment and training director, to replace **John E. Tilford, Jr.,** resigned.

J. E. Naron, freight traffic agent, Nashville, Tenn., named general agent.

MISSOURI PACIFIC.—G. C. Smith, superintendent, Missouri division and Missouri-Illinois Railroad, Poplar Bluff, Mo., named trainmaster, DeQuincy, La., succeeding **E. N. Craven,** transferred to the Kansas City subdivision, Osawatomie, Kan. Mr. Craven replaces **J. M. McJannet,** named assistant trainmaster, San Antonio Terminal, San Antonio, Tex. Mr. Smith's successor is **F. E. Fletcher,** superintendent, DeQuincy division, DeQuincy, who in turn is replaced by **A. K. McKeithan,** division engineer, Palestine division, Palestine, Tex. **W. H. Shideler** transferred from the Louisiana division, Monroe, La., to replace Mr. McKeithan, and in turn is succeeded by **T. L. Gibson. J. E. McVey** appointed division trainmaster, all subdivisions, Missouri division and Missouri-Illinois Railroad (west of Mississippi River), Poplar Bluff, replacing **F. B. Tinsley.**

NEW YORK CENTRAL.—Robert W. Stone appointed superintendent of police, New York, succeeding **Delmar W. Taylor,** who retired Aug. 31. **Harold P. Randall** has been appointed chief of police for the New York and eastern districts to succeed Mr. Stone.

NORFOLK & WESTERN.—Robert R. Horner will retire Sept. 30 as advertising manager and editor of the N&W Magazine, a publication for employees.

PENNSYLVANIA.—Lee H. Dickman, sales manager, New England states, Boston, Mass., appointed manager—freight sales and service, Northern region, Buffalo, N.Y., succeeding **Leo J. Moran,** who was recently transferred to Baltimore.

C. S. Hill, manager internal auditing, Philadelphia, appointed manager, regional accounting, on the staff of the comptroller.

PITTSBURGH & WEST VIRGINIA.—Edward Gluckson, general auditor, retired Sept. 1. The title of general auditor has been discontinued and the responsibilities of that position placed under jurisdiction of **M. E. Mayes,** vice president and comptroller.

ROCK ISLAND.—John M. Spann, general freight traffic manager, sales and service, Chicago, appointed acting resident vice president, Fort Worth, Tex., to succeed **L. B. Pritchett,** promoted (RA, Aug. 7, p. 32).

SEABOARD.—C. E. Critchfield, Jr., appointed assistant auditor mechanized accounts, succeeding **T. J. Gogerty,** retired.

Be sure to see
the MORTELL Company's
Track Exhibit
at the Allied Railway Supply Association

▼ Here you will find a box car completely equipped with our full line of upgrading materials and ready for actual service.

▼ These materials include:

1) MORTELL CARLINER—a new improved epoxy-coated paneling for lining box cars, trailers, and other containers to provide a durable, easily cleaned, odorless, moistureproof surface for high class loading. Easily installed over wood interiors to upgrade box cars.

2) AMORTEX PLASTIC UPGRADER—a sealer and liner (in spray-brush and calking grades) for permanently upgrading car interiors. Makes a smooth, tough surface resistant to vermin, oils, and solvents. No special application equipment or skilled labor required. Quickly applied outdoors in any weather. Cars can be put into service next day.

3) NO. 3009 NON-SKID STEEL FLOOR COVERING—a non-skid coating, tough and durable, for nailable steel floors in box cars, piggyback flats, automobile rack car surfaces, interior and exterior metal, wood and masonry surfaces made up of synthetic resins and inert fillers; ready to apply by brushing or spraying. Non-bleeding; abrasion resistant.

4) No. 3018 LATEX INSULMAT—a latex-base water emulsion coating to prevent condensation drip from galvanized steel box car ceilings. Non-flammable; odorless; non-toxic; solvent resistant. Easily applied by spraying methods normal for heavy-base materials.

If you are unable to be in Chicago September 11-14, write us for further details of these fine products.

Mortell COMPANY
Railroad Division
Kankakee, Illinois

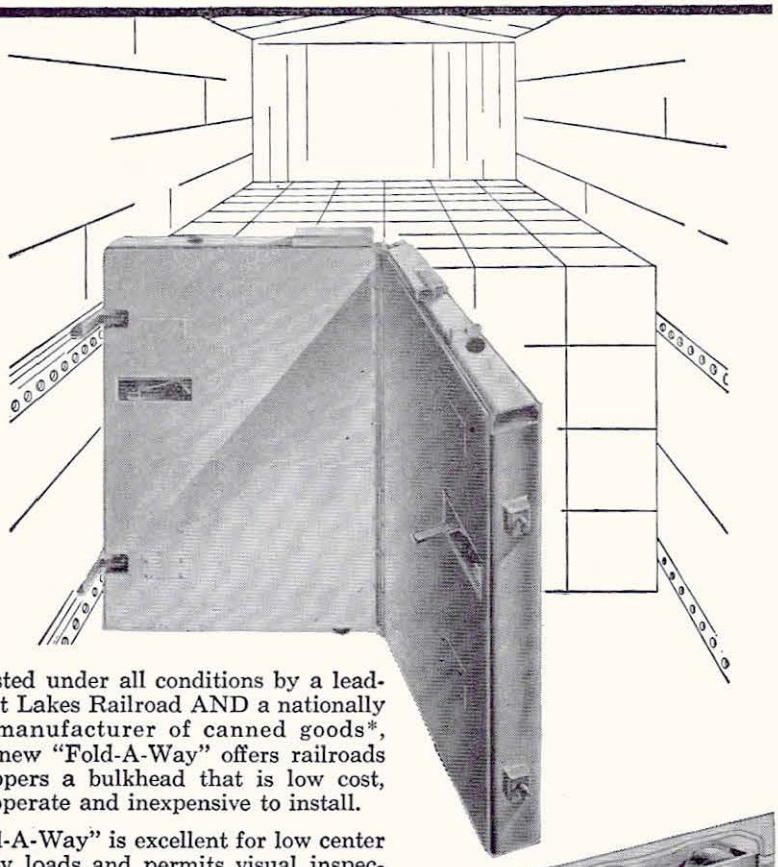
... serving American railroads since 1895

YOCAR'S RoLLoK "FOLD-A-WAY"

A bulkhead that ▸ rolls in place!

▸ has low installation cost!

▸ is simple to operate!

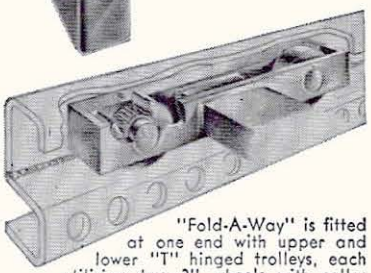


• Tested under all conditions by a leading Great Lakes Railroad AND a nationally known manufacturer of canned goods*, Yocar's new "Fold-A-Way" offers railroads and shippers a bulkhead that is low cost, easy to operate and inexpensive to install.

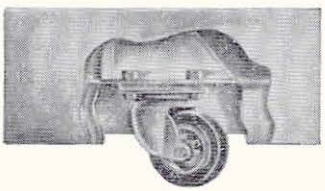
"Fold-A-Way" is excellent for low center of gravity loads and permits visual inspection without moving. No costly maintenance is necessary since there are no complicated operating mechanisms, and the basic unit is constructed to withstand rough treatment and abusive handling.

"Fold-A-Way" is the latest in a complete line of shipping devices designed and built by Yocar to serve the needs of railroads and shippers. For further information write, wire or phone.

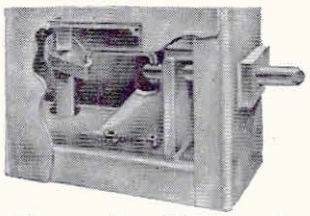
**Names furnished on request.*



"Fold-A-Way" is fitted at one end with upper and lower "T" hinged trolleys, each utilizing two 3" wheels with roller bearings. Trolleys roll on 3" — 9# structural channels fitted flush into the car sides.



Four heavy-duty ball-bearing swivel casters attached to bottom of "Fold-A-Way" permits easy, quick positioning.



"One man" positioning and locking. Four locking pins, 2 on each side of bulkhead, are actuated by 2 recessed locking handles.

YOCAR **YOCAR**

Youngstown Steel Car Corporation

NILES, OHIO

See "Fold-A-Way" at the A.R.S.A. Convention
September 10-13 at Booth 169. Sherman Hotel, Chicago, Ill.

TEXAS & PACIFIC.—William H. Rogers, formerly assistant vice president-traffic, Chicago & Eastern Illinois, Chicago, named to the newly created position of sales planning manager, marketing department, T&P, Dallas, Tex.

OBITUARY

Leo B. George, 65, retired chief of motive power and rolling stock, Canadian Pacific, died Sept. 5.

Supply Trade

Henry F. Dreyer has been named manager of railroad sales, **Esso Standard Region, Humble Oil & Refining Co.** Mr. Dreyer joined the Railroad Sales division of Esso Standard's marketing headquarters in New York 15 years ago. He has visited most of the South American countries as an advisor to Jersey Standard affiliates on administrative and marketing methods of the affiliates' railroad sales organizations.

Thomas C. Ballou, New York district sales manager, **American Car & Foundry division of ACF Industries, Inc.,** has been appointed manager of railway equipment sales.

Frederick H. Eaton, formerly with American Car & Foundry division of **ACF Industries, Inc.,** has joined the staff of **Magor Car Export Corp.**

Journapak Corp. has appointed **Magnus Metal Corp.** as its national distributor in the U. S. **T-Z Railway Equipment Co.** will continue to handle selected accounts for Journapak.

L. J. MacLennan Jr. has been named assistant manager of distributor sales for **Air Reduction Sales Co.'s** midwestern region. Mr. MacLennan was formerly assistant manager of distributor sales in the Pittsburgh district.

Henry F. Dreyer
Esso

Thomas C. Ballou
ACF

Current Publications

NEW BOOKS

THE FUTURE OF OUR CITIES, by Robert A. Futterman. 360 pages, maps. Doubleday & Company, Inc., Garden City, N.Y. $4.95.

CIVIL WAR RAILROADS. September 1961 issue of Civil War History, published quarterly by State University of Iowa, Iowa City, Ia. $1.50.

'Transport Is a Public Problem'

► **The Story at a Glance: That transportation is essentially a public problem was hammered home by speaker after speaker before the American Society of Traffic and Transportation last week. But the assertions of public interest were accompanied and partially countered by equally positive statements that carriers and users of transport "can do many things" to help themselves within the framework of present laws, regulations, taxes, and labor relations.**

"Transportation is inherently an important, continuing, complex and highly controversial problem for the public at large, users, carriers and the several levels of government." That's what Sidney L. Miller, Jr., assistant professor of transportation at the University of Pennsylvania, told the American Society of Traffic and Transportation's 16th annual meeting at Philadelphia on Sept. 6.

His words were echoed by Gordon Locke, general counsel of the Committee for Oil Pipelines: "The ultimate place of common carriers in our transportation future will rest upon the choice of shippers and the public in general."

They were echoed in effect also by Philadelphia Mayor Richardson Dilworth when he opened his luncheon address with the assertion that "no single problem is any more serious to cities and the suburban areas which surround them than transportation."

What Professor Miller termed "institutionalized frustration," has developed, he said, from "a governmental system of legal and extralegal institutions, policies, specific statutory provisions and procedural and review machinery which are vague and mutually inconsistent in crucial respects. This ambivalence tends to baffle, balk, counteract, neutralize and disappoint carriers and users in their efforts to bring about an allocation of transport and other resources consistent with demands for and cost of supplying transportation service. Frustration exists in relations between carriers and users, among carriers of the same types, and especially among carriers and agencies of different types. Frustration is also apparent in relationships among federal agencies . . . and between federal and other levels of government."

The direct effect of such frustration, he continued, is "in general terms, misallocation of transport resources, which means that unnecessary resources are employed to produce a given amount of service. . . Misallocation of transport resources amply cited and documented in many private and governmental studies, results from excess capacity in many transport markets, uneconomic and inflexible organizations of the transport industries, and demand pricing, all of which are encouraged by federal regulation."

As to the remedy: there have, he suggested, been more than enough studies, all "noteworthy for similarity in general findings and recommendations. Yet few of the major steps proposed have been implemented." The reason, Professor Miller said, may lie partly in "ignorance and lethargy, but "a better explanation is that federal policy is, only in passing, concerned with an efficient allocation of resources.

"Equally important, if not more important, are political realities which have little to do with encouraging efficiency. Among these are pervasive tendencies to protect the inefficient, restrain the efficient, and maintain the status quo through government aid and economic regulation, all in the name of what is clearly an illogical concept of equality in economic opportunity . . .

"We can, perhaps, learn to accept frustration and to accept inefficiency. After all, these seem to pervade our society, and it is comfortable to be able to blame our shortcomings on 'government regulation' and to use institutionalized frustration as a defense against change.

"Acceptance of frustration as a natural state, however, is not only unhealthy, but is unnecessary, because what man has created, man can change. Further, the dynamics of domestic and international affairs will not much longer tolerate inefficiency in our regulated transport industry."

In concluding, Professor Miller called on "those engaged in transportation work" to "assume responsibility for dispelling the long-run folly of protection and gaining acceptance of efficiency as the basis for transport policy. We have by no means done all we can to solve our problems within the existing framework of frustration, and have no right to expect more of legislators and of the general public than we demand of ourselves.

"What is lacking are convictions concerning efficiency, the will to be efficient, and the courage to abandon the safety of protection and the privilege of inefficiency."

In answer to questions following his talk, Professor Miller asked for "a return to the decision of the market place, in which cost and service are the deciding factors." No form of transport, he said, "is truly efficient, but all of them can do many things to approach that goal within the present framework of laws, regulations, taxes, and labor rules."

Mr. Locke, speaking on the same forum with Professor Miller, paid tribute to the Interstate Commerce Commission for the job it is doing

Standard Containers Urged

Standardization of containers was urged before the International Cargo Handling Coordination Association's Technical Conference in New York last week by Deodat Clejan, general manager of the Piggyback Division, General American Transportation Corp.

Mr. Clejan said that there must be a common denominator for the U. S. emphasis on large containers designed to handle the greatest amount of goods for the lowest dead weight and cost and the European reliance on relatively small "door-to-door" units. He added that, at present, the steamships emphasize quick turnaround of containers and give little thought to their inland penetration.

"I believe," said Mr. Clejan, "that the time when large containers will be transferred conveniently by tractors is close, which in turn, will greatly increase the amount of large containers used in transportation within the U. S.

"At least one plan has been created," he continued, "by one of the major transportation equipment companies in this country which permits the interchange of containers from one transportation company to another, both domestically and abroad, and takes care of problems such as per diem, maintenance, etc., which cannot be solved by the individual steamship line, railroad, or trucker when the equipment is not in his territory."

Mr. Clejan also urged the implementation of legal steps that would permit the United States to participate in agreements that now exist among European countries for custom-free temporary admission of containers.

"with a patchwork set of regulations as the ground rules . . . Carriers, shippers and government should cease to blame the Commission for the economic plight of the regulated carriers."

That "plight," he suggested, could be improved by repeal of the passenger excise tax, encouragement of voluntary consolidations of carriers of the same mode, amendment of Section 22 of the Interstate Commerce Act and repeal of the Comomdities Clause. He opposed, however, any major changes in the present framework under which transport regulation is administered.

Also on the same forum were Interstate Commerce Commissioner D. P. McPherson and F. L. Barton, deputy under secretary of transportation in the Department of Commerce. The former reviewed steps which the ICC has taken to expedite its work and to improve the quality of that work, while the latter outlined ways of improving the "vitality" of regulation. Among these, he proposed "greater participation by the regulated industries themselves."

Mayor Dilworth's address, at the society's luncheon, was devoted wholly to achievement and prospects of Philadelphia's efforts to improve its regional railroad commuter services.

"Cities and their suburbs must stand or fall," he said, "on their mobility. The automobile alone cannot provide the right type of transport. The more highways we build, the more headaches we create.

"The question is, "he asked, "can we get people out of their automobiles?" His answer: "I think we can, if we can provide good public transportation in good equipment at reasonable fares. But no private urban transport system can give such service and still operate at a profit, so we have to work toward an integrated, balanced transportation system under a central authority." That, he indicated, would require federal and state, as well as urban subsidies, but "mass transportation is essential to cities and subsidies wisely spent will more than pay for themselves."

The federal government, he also said, should work out a balanced transport system for the nation as a whole. "We have, in turn, emphasized air and highways, but have neglected our railroads."

Tests Show Heavy Potato Shipments Are Possible

Potato shippers can take advantage of incentive rates for heavier loads without suffering undue damage to the produce, according to a Department of Agriculture report. The USDA publication, "Effect of Heavy Loading on Quality of Sebago Potatoes Shipped from Florida by Rail," AMS-441 (obtainable free from the Marketing Information Division, Agricultural Marketing Service, USDA, Washington 25, D.C.), describes test shipments of six cars from Florida to Michigan and Pennsylvania with loads ranging between 36,000 lb and 50,000 lb of potatoes in 100-lb burlap bags. Bruising was slightly greater in loads of 50,000 lb than in lighter loads, the report says, but the difference is not enough to offset the savings in freight charges for heavy loads under the per-car rate. Under an incentive tariff rate per car, adopted in 1957, the cost per hundredweight decreases as the size of the load increases.

Letters

High Response

New York

To the Editor:

I am sorry to have taken so long to write this letter of appreciation for your presentation of our series of articles on reading improvement (RA, June 19, p. 28; June 26, p. 56; July 3, p. 34).

This is the first time that the series has appeared in a publication directed to your readership and the response was most interesting. Although there cannot be an accurate tabulation of resulting inquiries to each of the three articles, we have broken them down as closely as possible:

After 1st article	— 110
" 2nd "	— 125
" 3rd "	— 240
Total to date	475

In comparison with other publications this ratio of inquiries in relation to circulation total was unusually high. From past experience continuing orders will probably bring the total up to six or seven hundred.

This excellent testimony of readership I am sure is due, in great part, to your fine presentation of the series. It was a pleasure to write the articles for a publication that obviously does so much to put forth its material in a highly readable format.

Myron Q. Herrick, Vice President Development Research Institute, Inc.

For Advertisers, A Double Return

How many railroadmen would go along with me in my conviction that one of the greatest educational forces promoting railroad progress is the magazine advertising done by railroad equipment manufacturers? Take the advertising in this issue. It presents newsworthy facts about new, improved, or service-proved products for the industry. It publicizes automobile loaders; high capacity tank hopper cars; improved freight car brakes; load dividers; shock control devices; adhesion loss detectors and wheel slip controls; hotbox detectors; new lubricator pads; reflective paints; high-clearance low-deck freight cars; composition brake shoes; sliding flush car doors—just to mention a few.

They make stimulating reading matter for the progress minded railroad man. They advance the cause of better railroading equally with the news of the industry reported in the editorial page. And it is the revenue derived from this advertising by manufacturers that provides most of the wherewithal to meet the cost of the editorial portion of the magazine.

I don't believe it is boastful for me to express my belief that there is no educational force in the railroad industry of greater importance and effectiveness than Railway Age. If this is so, then the advertisers who make the magazine possible deserve the lion's share of the credit for the end result.

Most manufacturers realize that, by their advertising in Railway Age they are getting a double return—once in the direct publicizing of their specific products and services, and indirectly by the educational stimulus they let loose in the industry by making such publications as this one economically feasible.

America has a progressive railroad industry in part because it has a progressive industry press; and it has such a press because manufacturers have the foresight to take part in making constructive industry journalism possible.

Robert S. Lewis

PUBLISHER

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LUBRICATORS KEEP THE SIGNAL GREEN*

Southland Lubricator Pads are contoured to fit naturally and easily into the journal box and against the journal to assure safe, ample and economical lubrication under varying temperatures.

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THE *"DUO-CRADLE"*

AN 85 FT. TRAILER TRAIN FLAT CAR EQUIPPED WITH A SHOCK ABSORBING YOUNGSTOWN "DUO-CRADLE"

BOOTH NO. 244 TRACK NO. 4-S

THE YOUNGSTOWN STEEL DOOR CO.

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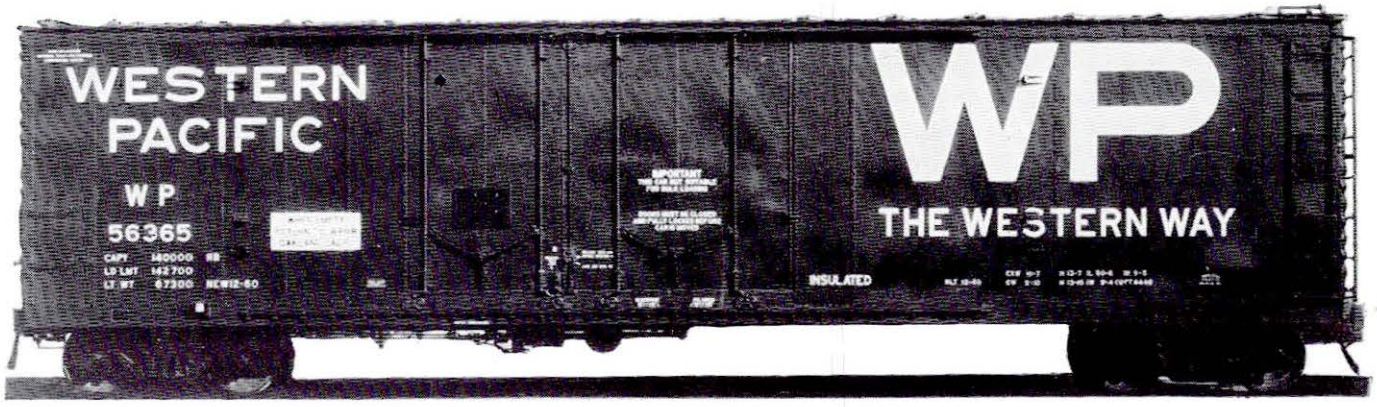
THE PROGRESSIVE WESTERN PACIFIC PIONEERS THE APPLICATION OF YOUNGSTOWN DOUBLE SLIDING FLUSH DOORS



YOUNGSTOWN DOUBLE SLIDING FLUSH DOORS APPLIED TO A WESTERN PACIFIC CAR

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How to take off weight *

SHOCK-FRE

CAR BODIES, retaining devices, auto racks . . . any structure riding *conventional* freight cars equipped with *conventional draft gears* must be sturdy. It must be *extra* strong, *extra* heavy to withstand repeated coupling impacts which often produce body forces exceeding a million pounds.

None of this extra weight or extra structural strength is really necessary . . . not if the car is a Hydra-Cushion underframe car.

With Hydra-Cushion protection, body forces, even at high-speed coupling impacts, are well below the damage zone. Thus it is possible to save the extra weight and its extra cost.

Without impairment of essential protection for car or lading, Hydra-Cushion car weights were reduced by more than 5,000 pounds; the weight of railroad auto racks lessened by approximately 20,000 lbs.: the weight of a lading retaining device greatly reduced for its use in a Hydra-Cushion car. Despite this weight saving, all provide the characteristic shock-free Hydra-Cushion ride.

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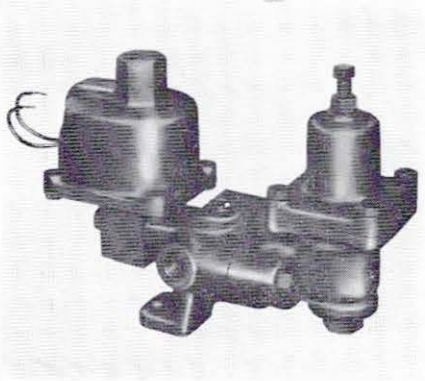
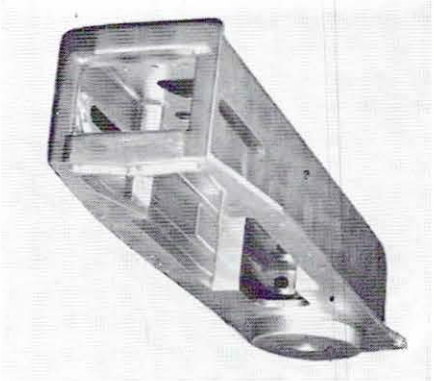
NEW PRODUCTS REPORT



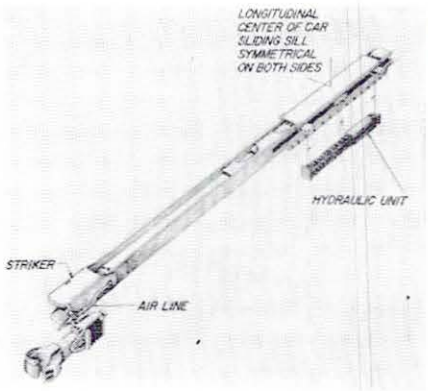
Wheel-Slip Control (RA-1)

A pneumatic wheel-slip control, which can be added to any locomotive air-brake equipment to control locomotive wheel slip with no appreciable loss in tractive effort, operates in response to an electric signal from existing wheel-slip detection systems. The minimum brake application necessary to restore the speed of the pair of slipping wheels to normal wheel-rail speed is initiated very rapidly and then quickly released. The light brake application reconditions treads of wheels so that adhesion will be improved, reducing the possibility of repeated slips. The action occurs on only the locomotive unit with the slipping wheels. Power delivered to traction motors is reduced in the traditional manner only when frequency and duration of recurring slips exceeds predetermined timing of a pneumatic timing circuit. Basic equipment to be added to the locomotive consists of one-wheel slip controller—a combined magnet valve and adjustable limiting valve, one double check valve, and two relay valves. *New York Air Brake Co.*



End Castings (RA-2)

Higher strength and improved service, it is said, are obtained with cast-steel underframe ends. The basic type, applicable to box and refrigerator cars, combines the draft arm and body bolster. According to the manufacturer, the draft-arm casting, the latest model (illustrated), has been applied during the past year to large numbers of hopper cars. Both types are applicable to new or rebuilt cars. *Buckeye Steel Castings Co.*



Protective Coating (RA-3)

An alkyd resin derivative using naphtha as a vehicle, when applied to plated or coated metal surfaces, forms a clear protective coating which is said to be extremely resistant to rust, corrosion, and oxidation. Bom-Kote may be applied by brush, spray, dip, roller, or flocoat method, depending on the size and contour of the surface to be protected. When properly applied, the coating is said not to crack, chip, peel, or discolor with age. *Bom-Kote Corp.*

Sliding Sill Assembly (RA-4)

The National 3C sliding sill assembly package fits any AAR standard center sill using such standard items as operating rods, striking castings, center plates, center fillers, yoke support plates, yoke keys, and brake pipe. The sill has 24-in. travel and uses AAR standard couplers. Impact track testing indicates a reduction of up to 82% in coupler force and 80% in lading force. The sill is now being tested in road service. *National Castings Co.*

RAILWAY AGE WEEKLY

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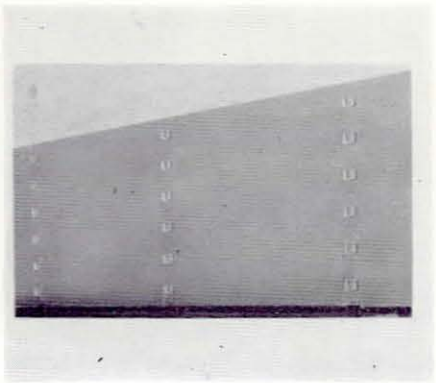
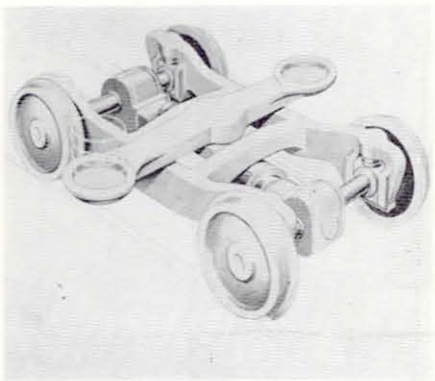


Lading Anchor Bar (RA-5)

A continuous bar anchor, applicable to steel box-car linings, is welded to Z-bar posts between the lining sections. Its patented tongue design speeds application and removal of steel strapping. The bar, available in varied lengths, may have anchors spaced as specified. No shimming is required; plate and anchor are flush with plywood lining. The anchor may be used in conjunction with the M-F plywood anchor. *MacLean-Fogg Lock Nut Co.*

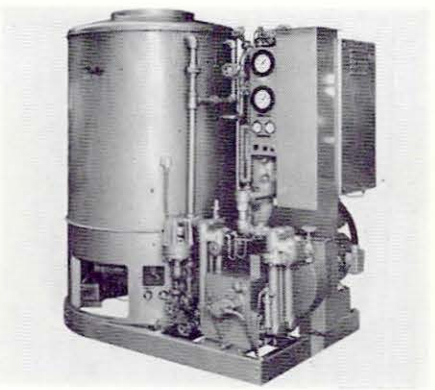


Passenger-Car Truck (RA-6)

A lightweight, high-speed truck, the General-70, is applicable to most mainline, commuter, and rapid transit cars. Bolster springs are arranged between the car body and the truck bolster, instead of between truck bolster and frame. Springing is a patented arrangement, but Pirelli, coil, air, or air-coil type can be provided. A wide range of motors and drivers for different applications can also be accommodated. *General Steel Industries, Inc.*

Car Lining (RA-7)

The Mortell carliner for upgrading box cars and reefers and for lining trailers is a light tan, prefinished paneling having a smooth, high-gloss surface. It is said to resist abrasion, nailing, and impact without splintering, and can be washed, dry-cleaned, or steam cleaned without deterioration. Panels (4- x 8-ft and 4- x 9-ft sheets) are fastened by stapling or nailing. Eleven sheets upgrade a 40-ft box car to 4-ft height. *Mortell Co.*



Epoxy Type Coatings (RA-8)

A two-coat, high-gloss finish can be obtained in 4 to 6 hr with the Tuff Fast-Dry enamel system. The one-to-one component ratio of the Tuff epoxy coating is said to provide easier mixing and application than present epoxy systems. It has high corrosion resistance and improved gloss and color retention. Both coatings are available as complete systems with rust-inhibitive primers for cars, track, signal equipment, bridges, etc. *Archer-Daniels-Midland Co.*

Steam Generator (RA-9)

The Clayton steam generator, available in capacities of 500, 1,000, 1,650, 3,000, and 5,000 lb of steam per hr, is said to be in railway diesel-electric heating service here and abroad. It is of the forced circulation, balanced feed, single water-tube design arranged for complete automatic operation. A minimum performance test of 80% and a 75% minimum thermal efficiency is attainable, according to the manufacturer. *Clayton Manufacturing Co.*

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9/11/61

Market Outlook

Carloadings

Carloadings for the week ended Sept. 2 were unavailable as this issue of Railway Age went to press.

Loadings of revenue freight for the week ended Aug. 26 totaled 592,265 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, Aug. 26

District	1961	1960	1959
Eastern	83,448	83,338	77,980
Allegheny	98,902	97,728	80,439
Pocahontas	53,016	50,804	47,799
Southern	106,395	105,615	112,161
Northwestern	95,176	103,778	67,610
Central Western	109,134	106,837	113,994
Southwestern	46,194	46,864	48,894
Total Western Districts	250,504	257,479	230,498
Total All Roads	592,265	594,964	548,877
Commodities:			
Grain and grain products	50,396	53,050	49,044
Livestock	4,067	4,644	5,583
Coal	104,779	105,015	101,663
Coke	7,514	4,958	2,877
Forest Products	39,719	39,821	42,725
Ore	57,084	61,673	9,081
Merchandise l.c.l.	28,911	35,613	42,235
Miscellaneous	299,795	290,190	295,669
Cumulative total, 34 weeks	18,132,995	20,374,082	20,655,222

PIGGYBACK CARLOADINGS.—U. S. piggyback loadings for the week ended Aug. 26 totaled 11,812 cars, compared with 10,774 for the corresponding 1960 week. Loadings for 1961 up to Aug. 26 totaled 372,779 cars, compared with 359,191 for the corresponding period of 1960.

IN CANADA.—Carloadings for the seven-day period ended Aug. 21 totaled 71,966 cars, compared with 70,951 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
Aug. 21, 1961	71,965	22,257
Aug. 21, 1960	76,289	24,036
Cumulative Totals		
Aug. 21, 1961	2,170,858	783,042
Aug. 21, 1960	2,331,157	914,012

New Equipment

FREIGHT-TRAIN CARS

► *North American Car.*—Ordered 50 89-ft Lo-Level Hitch Hiker flat cars from ACF. The cars are to be delivered this month.

► *Pennsylvania.*—With completion of new car orders totalling 3,580 cars ordered last November from PRR's Samuel Rea Shop, PRR shop forces are concentrating on the $5,000,000 repair program to rehabilitate 2,000 existing freight cars before the end of the year. More than 800 cars in the program have been completed and placed back in service.

FOREIGN

► *Canada.*—Cabinet approval is reported to have been obtained for financing the sale of $3,000,000 in locomotives to Brazil by Montreal Locomotive Works, Ltd. Preliminary approval in principle is reported to have been obtained for long-term financing of other export deals including over $32,000,000 in steel rails to two other Latin American countries.

► *Ireland.*—Coras Iompair Eireann will purchase approximately 100 new passenger cars within the next few years. Initial procurement will include 10 completed and 30 partially completed steel coaches. The agency intends to arrange for the manufacture of the cars in Ireland with a licensing agreement under which all required construction equipment and technical assistance would be supplied. Specifications and other information may be obtained for $28 from the Mechanical Engineer, Coras Iompair Eireann, Inchicore Works, Dublin 8.

SPECIAL

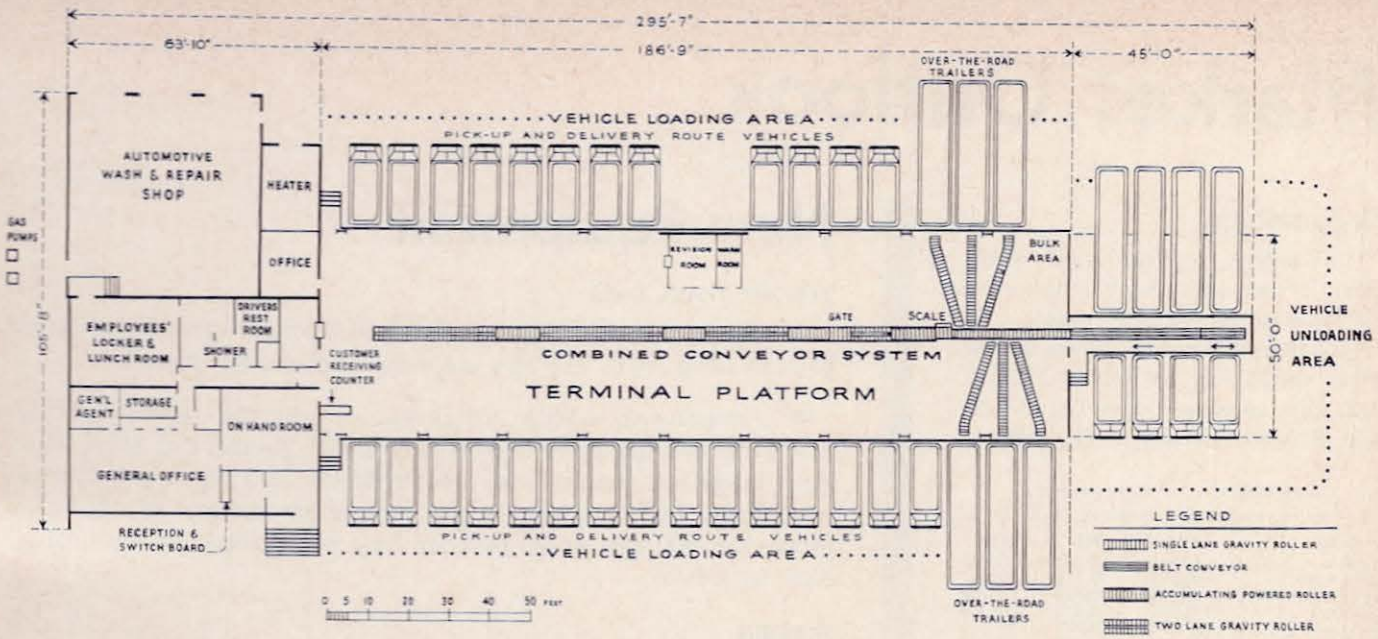
► *Philadelphia.*—Expects to spend $6 million to $7 million a year on improvement of its rail commuter services. The money will go for new equipment and improvements in stations, including increased parking facilities.

► *Transit Equipment Market.*—Pullman-Standard anticipates a $1-billion market in rapid transit cars during the next ten years. This prediction is based on increasing traffic snarls of America's fast-growing cities (see page 53).

New Facilities

► *Illinois Central.*—Ordered CTC materials from Union Switch & Signal Division of WABCo. for installation on 37 miles of track from Fulton to Ballard, Ky. (RA, May 1, p. 40).

► *New York City Transit Authority.*—Ordered equipment and materials to operate automatic "gap-fillers" on the curved platform at Grand Central Station on the Lexington Avenue line from Union Switch & Signal Division of WABCo. Proximity detectors, a recent development of Union Switch & Signal, will be provided for each car in the train whose doors are to open. The detectors sense the presence of cars at a particular point.



COMBINED CONVEYOR SYSTEM of gravity rollers, powered roller and belt conveyor speeds package handling.

REA Opens 'Key-Point' Terminal

REA Express has opened a new "key-point" terminal in Westchester County to serve New York City's northern suburban county. The new terminal at Ardsley consolidates the operations of five former express terminals in Westchester County.

The $750,000 Ardsley facility will provide better and faster surface, air and international express services to shippers and receivers in 62 Westchester communities.

CONVEYORS FAN OUT off the terminal's main conveyor line into three fingers on each side that extend to outbound trailers.

The brick, T-shaped terminal building is 105 ft wide, with a 50-ft terminal platform. The building is 300 ft long. Inside is a complex of conveyors and modern handling equipment for multi-vehicle loading and unloading operations.

Operating out of the new terminal, which replaces former REA Express facilities in Mt. Kisco, Mt. Vernon, New Rochelle, White Plains and Yonkers, are 46 direct daily pickup and delivery routes. Nine special pickup and delivery vehicles supplement the regular routes.

The terminal platform can accommodate at one time as many as 37 pickup and delivery trucks and over-the-road trailers. A total of 66 trucks, 10 tractors and 23 20- and 35-ft trailers are used in conjunction with the Westchester Terminal operations.

From the Ardsley location on New York Route 9A, the trailers handle express to and from New York for inbound and outbound connections with rail, truck, ship and air express service.

The Westchester terminal is the seventh of a series of key-point terminals REA Express is building across the nation.

ARDSLEY TERMINAL is seventh to be completed of REA's "key-point" terminals. New facilities promote use of rail for long hauls, with frequent short-haul truck routes in key terminal areas.

BARTD Seeks Joint Research

► The Story at a Glance: K. M. Hoover, chief engineer of San Francisco's Bay Area Rapid Transit District, has proposed to heads of other transit agencies that a centralized program of transit research and development be established. Recently authorized Federal funds would be utilized to finance a major portion of the cost of the research program, which would be directed by the Institute for Rapid Transit.

Advancing "rapid transit design, operations and construction methods by a half-century" and doing it in the shortest time possible is the overall objective of a centralized program of transit research and development proposed by the five-county San Francisco Bay Area Rapid Transit District.

BARTD's chief engineer, Kenneth M. Hoover, in presenting the proposal to the heads of rapid transit agencies in Los Angeles, Cleveland, Chicago and Washington, D.C., suggested a five-point research program based largely on design criteria for the proposed $1,078,000,000 BARTD system.

Mr. Hoover's proposal would include research and development work in the fields of:

- Light-weight trains
- Automation of system operations
- Automatic fare collection for cash and credit patrons
- Advanced methods of construction for subways and tunnels
- Advanced solutions for track and roadbed construction.

Mr. Hoover noted that all phases of the proposed research and development program would be of immediate benefit to the Bay Area Rapid Transit District. And, he added, if the program is successful in advancing rapid transit design, the results will be "important to every metropolitan area in the nation."

Mr. Hoover emphasized that much work in these five areas has already been accomplished by BARTD consulting engineers. "Before final design and construction take place," he added, "further detailed study is required. Because of our timetable, this means a great hurry for us. We believe that the required work can be accomplished only through a unified endeavor in which all interested parties will participate.

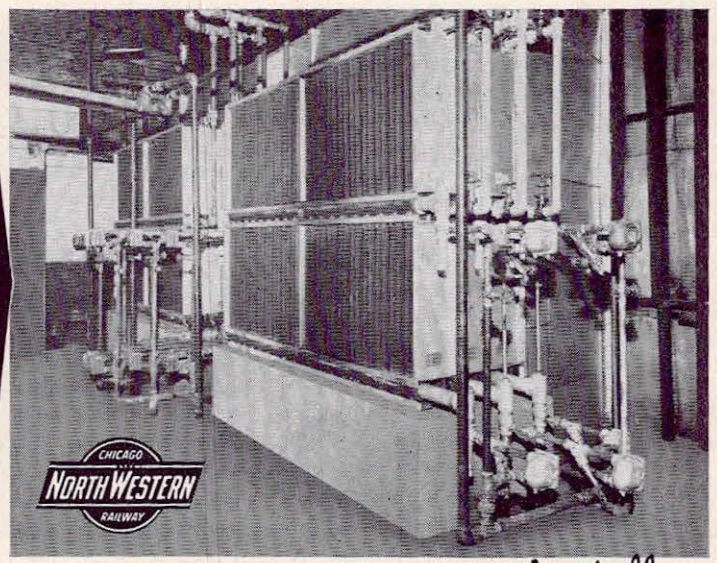
"Furthermore, we believe that this research and development are so necessary for the welfare of the great metropolitan cities of the United States that we are justified in seeking federal aid in carrying out the program." Recently authorized federal funds would cover a major portion of the cost, Mr. Hoover said.

Under the Hoover plan, equipment manufacturers and suppliers, consulting engineers and the staffs of transit agencies would work cooperatively on the various research projects. The research program would be directed by the Institute for Rapid Transit, a newly organized, national, non-profit organization.

Among the specific objectives the report proposed:

- Rolling equipment—"The basic objective . . . is to stimulate an industry-wide search for an improved vehicle that will, specifically, attract patronage from the automobile and reduce maintenance and operating costs to a minimum."
- Automatic train control—"The objective is to provide a modern, completely automatic train control system designed for maximum safety of operations on a headway of not greater than 90 seconds. It is imperative that every part of the control system be designed so that failure of any component results in a control reaction that is safe in every respect."
- Automatic fare collection—"The objective is to develop a system of automatic fare collection for both cash and credit riders which will permit use of a fare system based on the actual mileage traveled, with a diminishing rate per mile related to increased length of trips."
- Subway and tunnel construction—"The objective is to develop the most economical method that will minimize the disruption to business and city streets and at the same time improve the transit facility by permitting station construction close to the surface of the streets. In the optimum, such a method would be carried on just below the utility level and would cause no disruption to street traffic, nor would disturb utilities except those that are below the top of the subway construction and would reduce the need for de-watering and the underpinning of nearby buildings."
- Track and roadbed construction—"The objective is to develop track and roadbed that will speed construction, improve riding qualities, reduce the noise level and reduce maintenance and operating costs to a minimum."

for raising the engine house temperature at Green Bay, Wis.



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Railway Transportation Equipment and Parts, NEC	$ 46,132,079
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U.S. Railway Suppliers Find

► **The Story at a Glance: Over $1 billion worth of U. S.-built railway equipment has found its way overseas in the last seven years.**

Moreover, a Commerce Department spokesman believes that the overseas market for such equipment is growing and is likely to continue to grow despite the hobbles of currency restrictions and political upheaval.

America's biggest railroad export item is the diesel-electric locomotive, which last year accounted for nearly half the dollar value of such exports. Railway signal parts and accessories have also registered a steady growth in recent years, accounting for over $10 million in export sales last year.

"There are very few countries that wouldn't like American railway equipment," contends Francis H. Winget, of the Business and Defense Services Administration, U. S. Department of Commerce. Mr. Winget, who keeps close track of the railway equipment this country exports, points to 30 different categories of railway exports which accounted for sales totaling more than $1 billion over the past seven years.

Among the major orders that have already been recorded in 1961 is one by Brazil for 180 diesel-electric locomotives from General Electric Co. This order alone will add $23.5 million to the U. S. export total. Brazilian railroads have also ordered 23 rail diesel cars from Budd Co. (over $4 million) and 18 meter-gage passenger cars from ACF ($3.3 million) with delivery to begin next year.

To the more or less steady customers of past years are now being added potential new customers as emerging nations strive to build adequate transportation systems. Indonesia, for example, plans to acquire railway equipment and materials valued at more than $460 million. This will include 490 diesel-electric locomotives, 51 steam locomotives, 90 passenger-train cars, and large amounts of rail material.

Loans Stipulate 'Buy U.S.'

One reason why an increasing amount of such business will be channeled toward the U. S. is the fact that both the Development Loan Fund and the International Cooperation Administration have recently changed their rulings to provide that, where money is loaned for capital goods, these goods must be procured from U. S. manufacturers.

International Railways of Central America, operating in Guatemala and El Salvador, recently placed a $6.3-million order with General Motors Overseas for 44 diesel-electric locomotives. The order is contingent on approval of the company's application for a $4-million loan from DLF.

The Commerce Department is increasingly emphasizing the importance of overseas markets. The Bureau of Foreign Commerce, for example, has been replaced by a Bureau of International Business Operations and a Bureau of International Programs, both under the direct supervision of the assistant secretary of commerce for international affairs and his deputy.

This reorganization was effected, says Secretary of Commerce Luther H. Hodges, "so that we can more adequately meet the demands for growth in international trade and investment and fulfill our role in formulating U. S. foreign economic policy, especially as it affects the American business community."

Secretary Hodges has also announced that he is enlisting the aid of more than 800 trade association executives to expand United States exports by focusing attention on specific commodities.

The Railway Progress Institute last year created a new member committee "to study and report on the whole problem of world trade in railway equipment and other facilities, with the objective of strengthening our industry in this field of growing importance."

This committee is headed by J. W. Porter, executive vice president of General Railway Signal Co. RPI President

Tie Plates, Rail, Steel	$ 13,279,957
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Wheels and Axles, Mounted, Railroad Car, Locomotive, and Trolley, Rolled and Forged	$ 4,040,832
Railway Maintenance-of-Way Machines and Parts, NEC	$ 16,047,612
Cranes, Railway, Materials Handling	$ 14,386,841
Railway Signal Parts and Accessories, NEC	$ 44,052,413

Note: Figures exclude straight electric locomotives, railroad service, new, except switching. Table compiled by U. S. Department of Commerce (BDSA) from data reported by the Bureau of the Census.
NEC—Not Elsewhere Classified.

ncreasing Market Overseas

Holcombe Parkes says the committee "has been diligently identifying and studying the deterrents to our export business and the possible stimulants thereof, employing the technique of three sub-committees: one to dig up statistical information; one to develop ways and means of accomplishing the committee's goals; and one to handle the problem of the visits to this country of foreign visitors. Eventually this group hopes to devise a sound program to present to the federal agencies involved in foreign trade."

Diesels Big Money-Earner

The immediate export picture continues brightest for the diesel-electric locomotive. Last year, diesel-electric locomotives accounted for over $84 million of the rail export total, and this item consistently has been the big money-earner for the last several years. Locomotives—of various types—have brought U. S. manufacturers half a billion export dollars since 1954.

Locomotive and railway car parts are also among the steady money-makers; these items have brought a total of nearly $87 million over the past seven years. There is a still-flourishing residual demand for parts used in steam locomotives. Many countries still use steam units that were originally supplied them by the U. S.

Another category that has shown impressive growth in the export field is railway signal parts and accessories. These items accounted for $10.25 million in 1960, compared with $2.64 million in 1954.

Railway maintenance-of-way machines and parts have also chalked up steady gains during recent years—$1.24 million in 1954; $3.12 million in 1960.

The railway passenger and freight-train car market has not shown similar growth. This is because U. S. manufacturers find themselves with a demand for cars as diverse in gage and type as the countries that order them, which precludes the economies of standardization, and means that U. S. builders are frequently outbid by foreign car-builders. Principal competition comes from England, France, West Germany, Belgium, and Japan.

Locomotives, however, are a different story. Mr. Winget cites a variety of factors for the success of American-made diesel-electrics in the export market, ranging from the high quality of the product to faster delivery (generally six months from U. S. manufacturers as opposed to about a year in the case of foreign companies).

Mr. Winget also has high praise for American sales organizations. "Our sales forces are experienced and completely familiar with their market," he says. He points out that the foreign market has been surveyed and that U. S. manufacturers have built units specifically tailored for it.

"Name brand buying also means a great deal," he adds.

He emphasizes, too, that American-made locomotives come with a contract for both training and service and that, by the time a warranty runs out, local mechanics are usually able to take over the job.

He adds that overseas buyers seem to prefer "buying U. S." Even the licensee has to have certain components shipped from the U. S., he points out.

Who are this country's biggest export customers? It varies from year to year. In 1960, the biggest customer for U. S. railway exports was Mexico (nearly $36 million). Runners-up were Brazil ($25.58 million), Canada ($21.24 million), the Union of South Africa ($16.38 million), Egypt ($13.46 million), and the Argentine Republic ($10.56 million).

The export figures compiled by the Department of Commerce do not, of course, include the business done by foreign licensees and subsidiaries of U.S. railway equipment manufacturers —except insofar as the parent companies furnish components. Among major suppliers with such overseas connections are General Motors, Alco, Budd, Westinghouse Air Brake, and Fairbanks-Morse.

You Ought To Know...

Transport regulation should be equalized and liberalized and any certificated carrier should be allowed to own and give a complete transportation service, whatever the means employed. If these things were done, says Anthony F. Arpaia, in one stroke the perennial transportation problem would be well on the way to solution. "Let's give the public the benefit of some real competition in transportation, instead of preserving thousands of petty monopolies—rail, truck, air or water," the REA Express officer told a New Haven Traffic Association meeting in Cheshire, Conn.

Retirement and survivor benefits were being paid at the rate of $1 billion a year on June 30, the Railroad Retirement Board reports. Unemployment and sickness benefits totaled $262 million in the 1960-61 fiscal year. According to RRB, beneficiaries paid for current unemployment during the year were "almost 50%" more numerous than in the preceding year.

Rail labor is not opposed to mergers that serve the public interest, BRC President George M. Harrison told the nation in a Labor Day radio broadcast. But, he cautioned, "we find employers in many industries too intent upon built-in profits, regardless of volume, to fulfill the real promise of the private-enterprise system. Many of the prospective railroad mergers are based upon the objective of reducing public service and increasing profits. . . ."

"Transportation of the future" is what USSR Premier Khrushchev called a monorail transit system on display at a French trade exhibition in Moscow. Mr. Khrushchev also expressed interest in an elastic device for attaching rails to ties.

Official-Territory rates on iron and steel scrap will remain undisturbed if the ICC accepts the advice of Examiner Albert E. Luttrell. The examiner recommends dismissal of a complaint wherein the Institute of Scrap Iron and Steel seeks a rate cut on the basis of allegations that the present adjustment is unduly prejudicial to scrap and preferential of pig-iron and iron ore. Scrap iron is important traffic, the annual volume and revenue in Official Territory having averaged 16 million tons and $64 million, respectively, in recent years.

"Railroad unifications must be accelerated if the industry is to survive under private ownership," C&O's vice president — law, Joseph C. Kauffman, told the Great Lakes Railway Club. "No other action available to the railroads themselves has so much promise for good," Mr. Kauffman said, adding that railroads as a whole would suffer the same fate as the bankrupt New Haven if they are unable to "unify our properties, simplify our operations and reduce our costs."

C&O has called back 237 men at its Russell, Ky., car shops, to work on repairs on coal hopper cars. Build up of the work force is necessary because of an increase in car loadings and the demand for more hopper cars, C&O said. "A definite improvement in business is indicated in the upswing in automotive traffic and general merchandise carloadings," C&O reported in announcing that its earnings for August are greater than for any month of the year and better than any month of August since 1958.

All coach seats will be reserved on Missouri Pacific's Texas Eagle trains beginning Sept. 11. MP will impose a reservation charge ranging from fifty cents to $1.50 to partially defray the cost of the service and to discourage "no shows."

Freight cars awaiting repairs totaled 155,340 on Aug. 1, a slight increase over the year-earlier figure. Contributing to the 1961 total were box cars (58,496), hoppers (46,306), and gondolas (34,939).

End of passenger service on the Bangor & Aroostook came last week after the Maine Public Utilities Commission granted BAR's petition for discontinuance. BAR is the second major Maine road to discontinue all rail passenger service. BAR rail passengers have had no rail connections since Maine Central discontinued its passenger service in September, 1960. BAR will continue to operate its growing highway bus fleet.

Illinois Governor Otto Kerner has signed into law bills permitting longer tractor-trailer combinations on Illinois highways. Maximum legal length of regular type tractor-trailer has been increased from 50 to 55 feet and maximum length of auto transporters has been raised from 50 to 60 feet. The new laws also permit an overhang of vehicles over the cab and over the rear end of auto-hauling rigs.

"Operation Northeast," Philadelphia's bargain-fare rail plan, has been cited by Northeast Philadelphia leaders as an invaluable community service. The two-year-old program offers a 30-cent, half-hour ride to or from downtown on the Reading Fox Chase line. An estimated 560,525 passengers were carried in the 12 months ended Aug. 31,—390% more than in the last comparable "pre-Operation" year.

An emergency board has been created by President Kennedy to investigate disputes in which strikes against the Pullman Co. and the Milwaukee were threatened by the Order of Railway Conductors and Brakemen. The disputes involved the brotherhood's demand for a reduction in hours of work for sleeping car and parlor-car conductors.

A train-boat excursion featuring a three-hour tour around Manhattan Island, plus a two-hour ride on the Hudson River, will be offered Philadelphians by the Reading Sept. 30. Passengers from the Philadelphia-Jenkintown area will board the excursion yacht at Jersey City directly from the special train. This supplements Reading's series of scenic steam excursions for rail fans.

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The author was for some time manager of the Canadian National Railway Personnel Section at Montreal and there devised a management training program which attracted particularly wide and favorable comment. Mr. Daffern is presently associated with a prominent management consulting firm. His special knowledge of the training problems of the railroads makes this volume of unique value to transportation personnel.

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- The reasons why management men want to change their jobs
- Performance appraisals among middle management in Railroading

This book has been sponsored by the Railway Progress Institute and was produced under the supervision of the Institute's Committee on Executive Development

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How Do You Extrapolate?

Fortunately for railroads, their suppliers are not extrapolators. An extrapolator takes present trends and projects them into the indefinite future. When business is good, he charts a line trending upward —to show how much better business will be next year and thereafter. If business is bad, he extrapolates a curve trending down to zero or below. That's what he believes is going to happen to business, and he governs himself accordingly.

The stock market is crowded with extrapolators. When prices are high, they buy. When prices are low, they sell. The people who prosper are usually those who observe what the extrapolators are up to, and proceed to do just the opposite.

Present low traffic and earnings of the railroads fill extrapolators with pleasurable gloom. They expect the worst, and do their best to make it happen that way.

But, as we said, the railroads' suppliers are not extrapolators. They know, when business is bad, that it will get better when people try hard enough to improve it, and they are doing their best.

Just for example, in Chicago this week there are 121 producers of car and locomotive materials and components who are exhibiting their products at the Hotel Sherman, under the auspices of the Allied Railway Supply Association—this being about the same number as on this occasion in 1959. In addition, there are 41 track exhibits, occupying just about a mile of track—twice as many exhibitors and three times the space utilized in 1959.

TREND-CHANGING vs. EXTRAPOLATING

These suppliers are not extrapolators of bad business—but active promoters of better business—for the railroads, and simultaneously for themselves. They are not showing just the same old-line products either—but a lot of improved ones, and with particular emphasis on specialized equipment to appeal to shippers.

This year has been a poor one for freight car orders—barely 13,000 reported so far in our weekly news pages—but 57% of these cars have been specialized cars, designed for specific traffic. These cars include those to handle piggyback vans and trailers, auto-rack cars, covered hoppers, specially designed gondolas, mechanical refrigerators, cars for ore and pulpwood, jumbo tanks. Then there are cars with cushion underframes; and "lo insulated, heated, double-door and f All this equipment has been designed hold or attract specific traffic to move Traffic growth, these days, doesn't c Railroads have to go out and get it— convenient and economical they ca service for potential customers, the m will get.

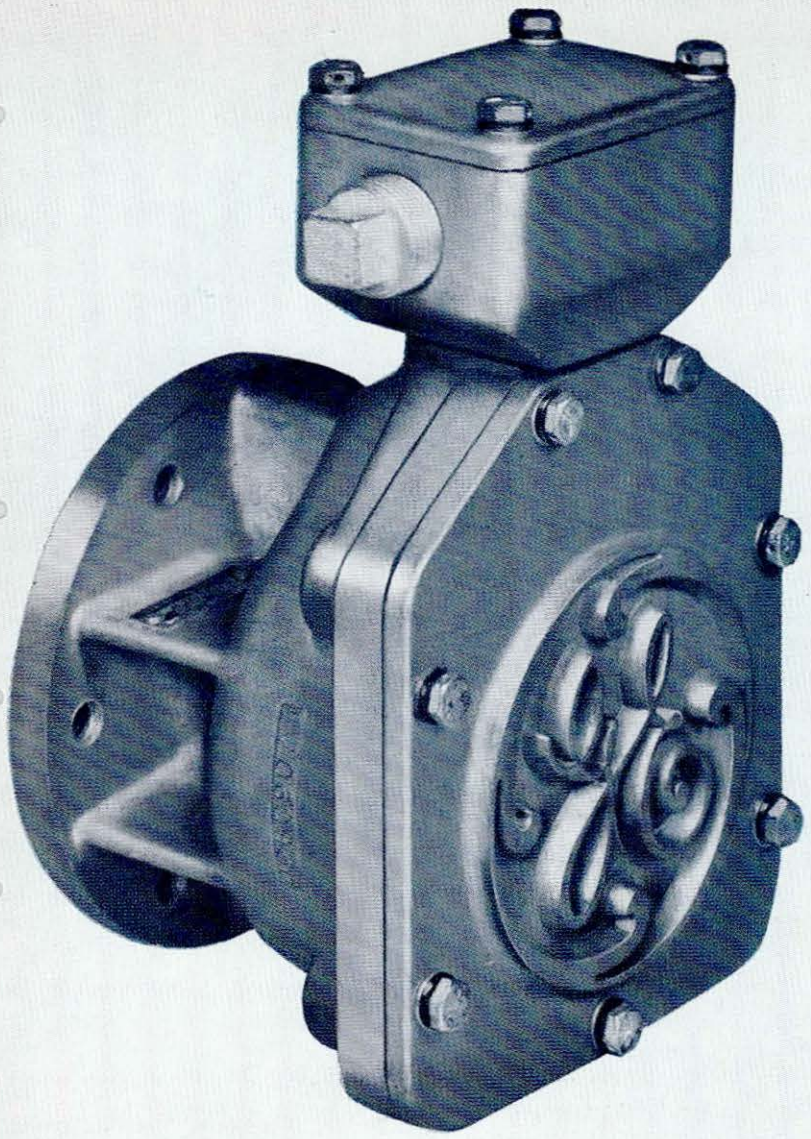
The exhibits at Chicago are aime at the "Coordinated" group of railw and maintenance officers who are economy-seeking meetings this week But these exhibits hold interest for a audience. They should appeal especia traffic officers and their customers—a people, who are faced with the job of much of this new equipment they willing—to finance. They need to fi hand, just what this equipment is like can do to increase earnings.

SELF-HELP INSPIRES CONFIDENC

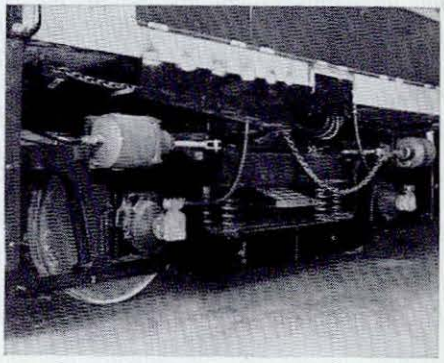
The influential public has, at last, f to the harm being done the country by mismanagement which has impoveris roads. Nothing will so encourage the necessary steps to change the railro environment for the better as drama vincing efforts by the railroads to he The suppliers are doing all that lies i to provide railroads with this necess munition. Railroaders of all departm themselves a favor to go take a look a on.

There are important areas of traffi ness is good, and getting better all t most of these areas are those whe venient equipment, more attractive proved service (or a combination of t been provided. Ingenuity and persi part of railroad men will multiply where these sovereign remedies for d can be applied. In the search for su ties, the collaboration of suppliers financial people whose job it is t necessary capital—is indispensable. can think creatively without any exter but, for most of us, looking at a sp improved equipment that is creating the most powerful initiator there is imagination. Such stimulants are on numbers at Chicago this week.

Determination and persistence w extrapolators of gloom. All of us can of it than we've been getting—and h where concrete remedies are being a large doses.



General Electric's New Adhesion Loss Detection and Correction System



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Now, adhesion loss can be detected and corrected automatically at all speeds with minimum loss of tractive effort. General Electric's adhesion loss correction system detects and corrects wheel slip for each locomotive unit individually. Full rail horsepower utilization is assured over the entire locomotive speed range, resulting in increased gross-ton-miles per train hour. Maintenance on traction motors is reduced, motor life prolonged because destructive motor overspeed caused by wheel slip is eliminated. Wheels and rails last longer. For further information, contact your G-E Sales Engineer, your locomotive builder or write Locomotive & Car Equipment Department, Building 12, General Electric Company, Erie, Pa.

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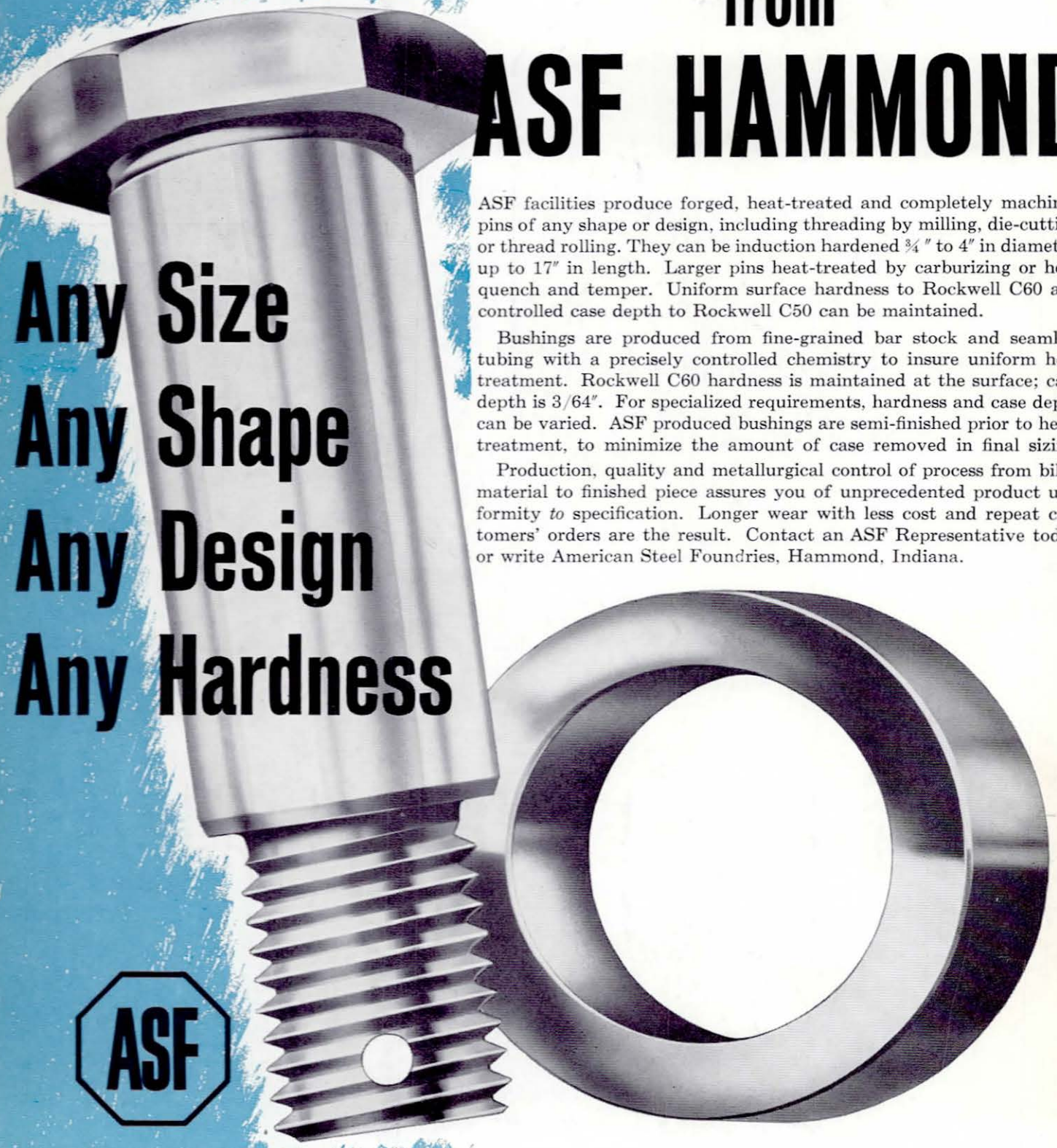
GENERAL ELECTRIC

PINS and BUSHINGS from ASF HAMMOND



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